confluence+

A Vision of Growth, Sustainability, and Hope for the Small Town of Cairo, Illinois

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confluence+

A Vision of Growth, Sustainability, and Hope for the Small Town of Cairo, Illinois

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Department of Architecture
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By

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thesis proposal

"As an architect, you design for the present, with an awareness of the past for a future which is essentially unknown" - Norman Foster

small towns, big problems+

Small towns across the United States are facing several social, economic, and environmental challenges. Declining and aging populations, inadequate or lack of housing, and struggling economies are some of the many issues that plague small town America.

The town of Cairo, Illinois in particular stands out due to its drastic population loss, food and housing shortages, and severe urban blight. The people of Cairo have tried to bring their town back, but have been unsuccessful in their efforts. This presents a unique opportunity to revive this dying community through architecture. This thesis aims to provide a solution that addresses the glaring issues facing small towns like Cairo, Illinois, by designing a mixed-use development that promotes growth, sustainability, and hope for the local residents.

Thesis Question

How can architecture help to revitalize the dying, small town of Cairo, Illinois?

Thesis Abstract+

Figure 2

fighting big, for the small things+

Small towns were once the backbone of America's heartland, existing as bustling epicenters of commercial and economic activity for the surrounding rural communities. However, over the past century, many of these small towns have slowly eroded away. Since they are often dependant on a single industry, the decline or extincton of such industries has left many rural communities struggling to survive.

Situated at the southernmost tip of Illinois, exists the dying and dilapidated town of Cairo. It is the seat of Alexander County and lies just north of the confluence of the two largest rivers in the United States: the Mississippi and the Ohio. The community of Cairo has suffered greatly from a history of racism, economic shifts, societal changes, and environmental obstacles that have nearly destroyed and eliminated this town. Due to most of the white population leaving during the civil rights movement, most of the residents living in Cairo are either Black or African American, which something that isn't often seen in small towns.

At its peak in the early 20th century, Cairo boasted a population of over 15,000 people. The current population is roughly 1,700, a figure barely more than 1/10th of what it used to be. The once thriving downtown of-Cairo, is now just an empty shell with abandoned lots and crumbling buildings.

Within the past few years, things in Cairo have continued to get worse. A lack of access to fresh food and basic necessities has been due to the lack of a grocery or general store in town. This has been one of the main culprits that has been slowly crippling this community. Additionally, the recent closure and razing of multiple, affordable housing complexes have displaced hundreds of families. This has forced many long-time Cairo residents to leave the town they love so much.To this point, between 2010 and 2020, Alexander County has highest percentage loss of population of any county in the United States, by quite a considerable margin.

Despite the countless challenges that this little community faces, it doesn't stop fighting. The people are what makes this dying town great. Even when the flood of 2011 ravaged the region, they chose to stay. Even though they don't have access to fresh food, they still will drive to other states, just to get the basic necessities needed to survive. Even when they are displaced from their homes and forced to leave, they still want to stay no matter what. They want their town to be revitalized, to be revived. There are countless articles and -ticles and interviews that showcase about the passion these residents have for Cairo. They continue to fight for it. They want it to thrive.

While some residents have grown skeptical due to several past businesses coming then leaving shortly after, most of them remain optimistic. The people of want businesses and people to come and stay. They want stability. They wait patiently in hopes that Cairo will one day make a comeback. I think it was discovering this passion that stood out to me the most, made me really interested in Cairo and this thesis.

While many small towns such as Cairo have been hit hard with economic struggles, population decline, and a lack of investment, hope is not lost for them. There exists a growing recognition of the need to revitalize these communities, bring them into the 21st century, and bring life and downtown activity back to the nearly 50 million people who live in countless rural communities across America.

The primary goal of this thesis is to explore how architecture and sustainable design have the potential to reconnect, rebuild, and revitalize downtown Cairo, Illinois. This will be done through the introduction of a mixed-use development that has a focus on sustainable design, contextual architecture, innovative strategies, tourism based solutions, and community engagement, to name a few. Additionally, this development will feature a combination of multiple other typologies that will all be integrated in a way that addresses the unique needs of Cairo and promotes a sustainable and livable community. In some capacity, this thesis will also have the potential to be a model for other small town revitalization efforts across America.

Thesis Narrative+

Figure 3

Project Typology+

Urban Revitalization + Mixed-Use

The typological proposal of this thesis is urban revitalization through the introduction of a mixed-use development within Cairo. This 'Mini-Masterplan' will contain several sub-typologies that will aim to provide an comprehensive solution that addresses the various social, economical, and environmental issues that currently exist within Cairo. A few of the notable

Foodwalk

The foodwalk will be used to describe the proposed town square area comprised of multiple food and beverage options spread throughout the development. This will aim to address the food insecurity of the area and provide a staple attraction for prospective tourists.

Mixed-Income Housing

Mixed-Income housing will be introduced in response to the current housing crisis. The main focus will be on affordable housing and subsidized units for the existing residents. A smaller percentage of higher-end, market-priced units will help attract a new, younger generation of residents while also help bring new money to the area.

Fueling Station

An in-town gas station will provide refueling options for both residents, and tourists who are visiting Cairo or simply passing through. It will offer both traditional gas as well as electric charging facilities, with the latter taking advantage of the national and worldwide shift towards electric vehicles.

Community Center + Business Incubator

A community center will help bring physical well-being and promote community engagement through a multi-purpose court, flex rooms, comumunity kitchen gym, fitness center, and pharmacy. A library and technology center will provide existing residents access to online services, occupational opportunities, and educational resources. A business incubator will help support local entreprenuership.

Riverwalk

The riverwalk will be designed along the existing floodwall by the Ohio River. The first and most prominent solution will be an elevated promenade atop the floodwall that provides various community-focused spaces that can be used even in the event of a flood when the floodwall has to be closed off completely. Additionally, a linear park will help reconnect the Cairo with its railroad heritage.

Figure 4

Project Justification+

Societal+

Small towns, play a pivotal role in American society. According to the 2020 U.S. Census, of the nation's 328 million people living in the U.S., over an estimated 46 million of them still live in rural areas. Small towns often serve as the social, economic, and cultural hubs of these rural areas.

However, the dismal condition of Cairo, Illinois is part of a larger trend of social and economic decline in small town America. This thesis aims to address this decline in Cairo, Illinois through architecture and offer an innovative and sustainable approach to small town revitalization.

Personal+

I grew up in a small town of less than 200 people, so I have experienced and understand some of the things that make a small town great. It was shocking for me to find a town that once had over 15,000 people, be reduce to one-tenth of its former glory. Cairo, Illinois is riddled with challenges that the people must face. However, it will be difficult to succeed on their own, maybe nearly impossible. The hope of this thesis is provide hope to its residents and to visualize a potential solution that will spark new, external interest in Cairo, and other dying, small towns across America.

Furthermore, I believe this thesis is an appropriate demonstration of both my architectural knowledge, and design skills. First, it tests my ability to extensively analyze the existing conditions of a site and then create a viable design that responds to the social, economic, environmental, and cultural needs of that area. Second, it will allow me to both explore and better understand several key topics and challenges facing the field of architecture. Lastly, it not only allows me to showcase my existing skills, but also helps improve my overall process of professional research.

Project Emphasis+

Revitalization

This thesis will investigate the importance of reivtalization in smaller towns and communities such as Cairo, Illinios. It will aim to address multiple common issues such as population decline, deteriorating infrastructure, and the need for economic development through stimulative measures like tourism.

Connectivity

The second main focus of this thesis is how can concepts such as connectivity and community engagement be employed through design. Design solutions such as connecting the community back to the riverfront and creating engaging public spaces that encourage social interactions and forster a sense of belonging. Promoting a walkable, bikable, and connected downtown will also be extremely important.

Sustainability

The next emphasis will be highlighting the integration of resilient and sustainable design strategies that address various social, economic, and environmental challenges faced by the community. Design strategies that promote long-term sustainability of the community is one such example of solutions that will be explored.

Contextual Design

Due to the general nature and stigma around small-town design, it is critical that this project explores the successful harmonization of innovative solutions with thoughtful preservation of the local community, context, culture, and heritage of the area. Incorporating the rich, local history into the design will help create a sense of identity and place while preserving Cairo's unique past.

Adaptability

While the primary focus of this thesis will be revitalization of Cairo, Illinois specifically, an alternative point of emphasis will be creating and employing unique solutions that could be viably adapted in other small towns and communities across the United States who are also struggling to survive.

Major Project Elements+

Foodwalk+

- Restaurants
- Central Town Square
- Flexible Spaces for Food Stalls

Housing+

- Affordable Units
- Market-Rate Units
- Community Gathering Spaces

Community Center+

- Business Incubator
- Library
- Technology Lab
- Study Rooms
- Multi-purpose Court
- Gym
- Community Kitchen
- Pharmacy
- Childcare Area
- Multipurpose Rooms

Fueling Station +

- Traditional Gas Canopies
- Electric Charging Facilities
- Parking

Hostel+

- Dormitory Rooms
- Common Spaces
- Grocery Store

Riverwalk +

- Elevated Promenade
- Railcar park

Historywalk +

- Interactive Historical Experience
- Exhibits, Signs, Murals, Kiosks, etc.

User + Client Description+

Client Description+

The proposed client of this project would be a joint committee consisting of the Cairo Development Committee, a private developer group, and members of the Southern Five Regional Planning District and Development Commission.

Cairo Development Committee

The Cairo Development Committee was created to help in revitalization efforts within Cairo and help attract attention for new commercial and economic interests. Committee members include the mayor of Cairo, staff members of Cairo Public Utilities, as well as a diverse group of community leaders. This committee will serve as important sources of information regarding the specific needs of the community as well as act as liasons between the project and the people of Cairo.

Private Developer + Investing Group(s)

The second section of this committee would be multiple private developers and investors that will be responsible for funding a large amount of this project. The project should focus on a proper return on investment for these clients.

Southern Five Regional Planning District & Development Commission

The Southern Five Regional Planning District and Development Commission serves the Illinois counties of Alexander, Johnson, Massac, Pulaski, and Union. This commission helps identify, develop, and frame the economic vision for the region. The development should ensure stable growth for the community of Cairo, stimulate the local economy, all while remaining aligned with the regional vision.

User + Client Description+

User Description+

The proposed users of this development would consist of the existing residents of Cairo, residents and communities of the surrounding region, prospective tourists, residents and businesses, and members of the disabled community.

Residents of Cairo, Illinois

The current residents living in Cairo are the primary users and focus of this project. Additionally, if the town is forseen to grow then the design should attempt to address the needs of future, prospective residents as well

The Surrounding Region

In some capacity, this project will likely affect several communities outside of Cairo. The design should aim to bring new interest and activity to the region, and help refocus state efforts to address arguably the most economically depressed area in Illinois.

The Disabled Community

Many existing residents and prospective tourists that may come to Cairo, live with some sort of a disability that affects the way they interact with the environment. It will be important for the design to be inclusive of this and make sure that accessibility is universal throughout the project.

Tourists

A critical aspect of this project is the transformation of Cairo into a tourism-based economy. The project should have an attractive design that appeals to outside interest, include proper tourism infrastructure, and effectively showcase the historical and cultural heritage of Cairo.

Cairo, IL

Site Selection+

The site covers several blocks within the downtown district of Cairo. Downtown Cairo used to be a bustling center of economic activity nearly a century ago. Having a population of 15, 000 people, the streets were lined with shops and restaurants, with was no shortage of business anywhere in sight. However, now it is just an empty shell of what it used to be. Some lots are just grass fields, some with piles of rubble, and others with crumbling buildings that still stand, but just barely. Both the town and the site contain a rich history, both good and bad. Lewis and Clark, the Civil War, Huckleberry Finn, the are some of the great elements of Cairo's history. Unfortunately, this town has also been home to terrible acts of racism that stain the history books of this town.

Additionally, due to its location at the confluence of the two largest rivers in the nation, Cairo has characteristically been home to severe flooding, with the recent flood of 2011 being the most notable. This thesis will explore the effect that flooding has had on this small community and address it within the design if necessary. Lastly, while Cairo, Illinois is the central focus of this thesis, this project also has the potential to exist as a viable template for redeveloping other small towns across the U.S.

Figure 5

Site+

Location+

The site for this thesis is located in the historic downtown of Cairo, Illinois. It is a town of roughly 1,700 people and lies a little more than a mile north of the confluence of the Mississippi and Ohio River.

Latitude: 37° 0'0.40"N

Longitude: 89°10'1.03"W

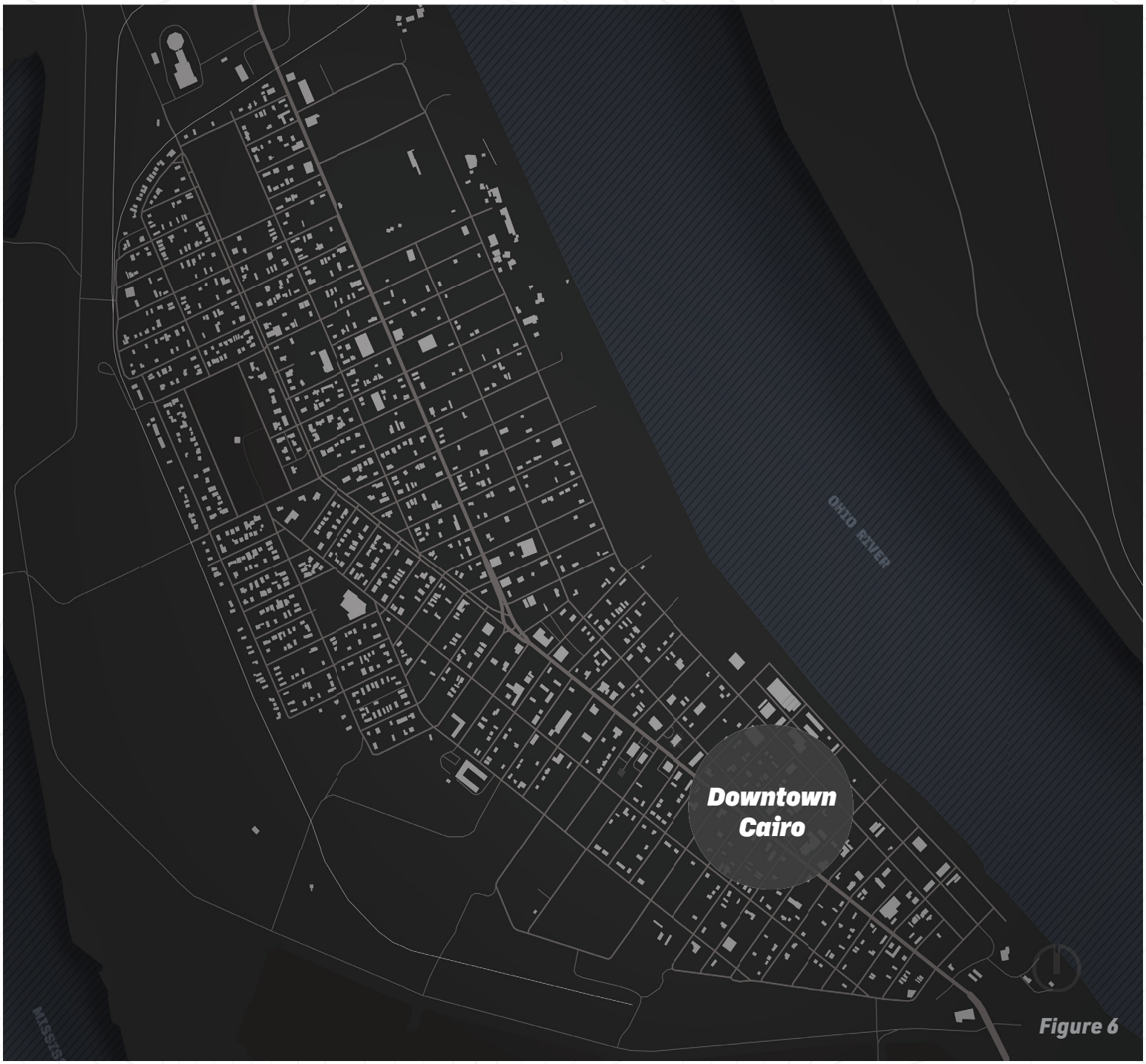


Figure 6

Goals of the Thesis Project+

Theoretical Goals+

- **Sustainable development:** Promote environmentally-friendly practices throughout the project.
- **Urban revitalization:** Revitalize the town of Cairo by addressing key challenges, stimulating economic growth, and fostering community.
- **Historical Preservation:** Investigate solutions that help preserve, enhance, respect, and celebrate the unique history, identity, and culture of the area.

Physical Goals+

- **Walkability and bikeability:** Encourage a connected urban environment that encourages non-motorized transportation options.
- **Mixed-use development:** Integrate various land uses and functions to create a vibrant, diverse environment.
- **River connectivity:** Enhance access and interaction with the river while managing flood risks.

Social Goals+

- **Inclusivity:** Provide affordable housing options and ensure existing residents are not displaced.
- **Community engagement:** Foster community interactions and connections among neighbors.
- **Economic development:** Support local businesses and generate new jobs through tourism, entrepreneurship, and industry growth.
- **Education and skills development:** Bridge the educational and technological gap often found in small towns by offering resources and job training.

plan for proceeding

Research Direction + Methodology +

Research Direction +

Thesis Question: *How can architecture help to revitalize the dying, small town of Cairo, Illinois?*

Investigation into the core question of this thesis will include several aspects of research. The first focus of this thesis will look into small-town revitalization and its related strategies, frameworks, criticisms, and benefits. Secondly, research into the various typologies will also be conducted. This includes revitalization projects, mixed-use developments, and other typologies that will also be present within the proposal, such as public housing, community center, gas station, riverwalk, etc.

Another area of research will be sustainable design and its role within architecture. Common design strategies, elements, and materials are some aspects that will be identified. The social, economic, and environmental impacts of sustainable design on a community will also be examined. Lastly, since I am unable to visit the site in person, a comprehensive site analysis will be completed digitally instead. This will help to get a better understanding of the various qualitative and quantitative aspects of the site.

Design Methodolgy +

This project will aim to utilize a combination of research methods that include: Historical Research, Case Study Analysis, Correlational Research, and Logical Argumentation. Below is a shortened list of some of the countless questions within each area of research, that I will attempt to answer through this thesis.

Historical Research

- What is the history of small town revitalization, and what factors have contributed to the decline of small towns like Cairo, Illinois?
- What are the historical factors that have contributed to the decline of Cairo, Illinois?
- What are some theoretical frameworks that relate to small town revitalization, and how can they be successfully applied to this thesis?
- How has the unique history and culture of Cairo shaped its current socio-economic and environmental challenges?

Research Direction + Methodology +

Case Study Analysis

- What are some examples of successful small-town revitalizations, and how can their strategies be applied to Cairo, Illinois?
- How have successful revitalization efforts addressed housing crises, economic development, and community engagement in small towns like Cairo?
- What are some examples of small town revitalizations that have failed? Why did they fail?
- What are examples of mixed-use developments that have focused on sustainability? How did it affect the surrounding community, environment?
- In terms of smart planning and design, what lessons can been learned and applied to Cairo?
- What are the general challenges and opportunities for revitalization efforts in small towns like Cairo?

Correlational Research

- How does the presence of revitalization efforts, including mixed-use developments, impact the surrounding community?
- What is the relationship between revitalization efforts and economic growth?
- How does sustainable design affect the overall well-being of a community?

Logical Argumentation

- What are the advantages and disadvantages of mixed-use developments compared to single-use developments?
- What role does community engagement play in the revitalization process, and how can it be facilitated through architectural interventions?

Documenting the Design Process+

Investigation

Hand-Sketching + Modeling
Digital 3D Models

Methods of Preservation+

Create a digitial collection of gathered research that is properly referenced, updated, secure.
Set a schedule dedicated to the digital back up of new data, materials, and proccesses.
Regularly document process and findings within the thesis book.

Software+

Design Investigation + Realization

Sketchup Pro
Autodesk Infraworks
Rhino + Grasshopper
Autodesk Revit
Autodesk Insight

Graphic Representation

Adobe Photoshop
Adobe Indesign
Adobe Illustrator
Lumion
Enscape
D5 Render

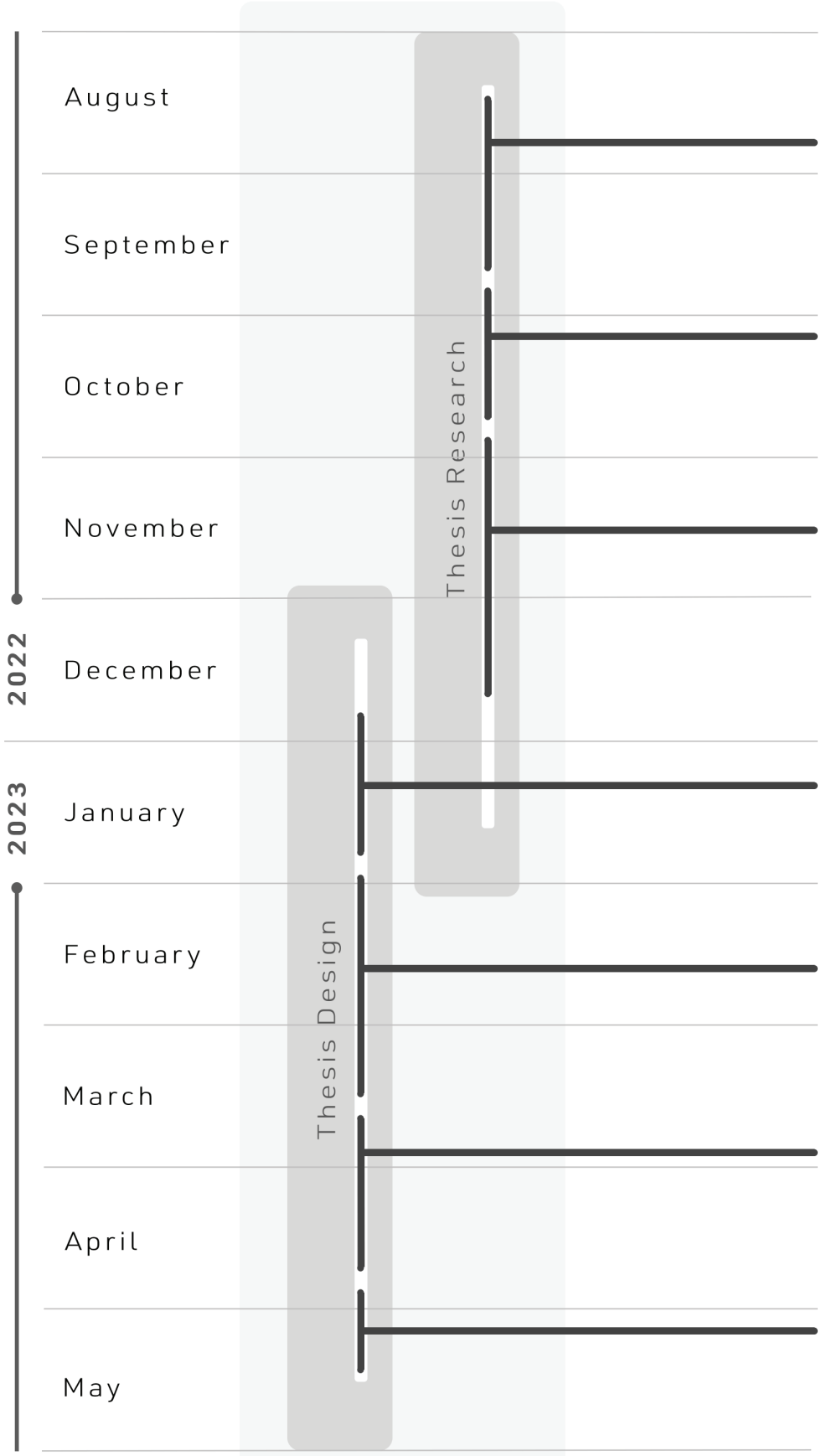
Presentation+

Final Display Boards + Models
Digital Slideshow (Adobe PDF or Microsoft Powerpoint)
Oral Presentation

Publication+

Submitted to the NDSU Repository
Limited-Edition Hardcopy

Specific Schedule for the Project+



Thesis Research+

Topic Exploration

- Brainstorm
- Selection
- Thesis Viability

Thesis Proposal

- Narrative
- Justification
- Context
- Goals

Research Document

- Precedents
- Premise Research
- Site Analysis

Thesis Design+

Schematic Design

- Contextual Response
- Spatial Programming
- Structure
- Site Design + Circulation

Design Development

- Refinement
- Materials
- Sustainability
- Detailing

Production

- Graphic Development
- Digital Presentation
- Video
- Defense Preparation

Presentation

02

thesis research

"Architecture is about people." - Francis Kere

Thesis Question+

How can architecture help to revitalize the dying, small town of Cairo, Illinois?

Figure 7

Research Findings+

Background+

According to the 2020 U.S. Census, around 46 million people live in small towns and rural communities. This may seem like a large or small number depending on the context and what it is compared to. However, rural areas account for 97 percent of the country's total land area, which is an obvious, yet undoubtedly, considerable figure. While large cities, especially those near the coast, continue to grow and progress into the new age of technology, many small towns are going in the wrong direction.

Starting in the latter half of the 20th-century, rural America has seen seismic losses in population, economic decline, and environmental degradation. There are several reasons behind this falloff in small towns. One of these reasons is the shift from a rural, agricultural-based economy to a more industrial and service-based economy. This led to the migration of millions of people to larger, more developed cities.[1]

A consequence of this migration to larger cities is the resulting change in the demographics of those communities. When young people move to urban areas to chase opportunities, this not only thins the size of the community, but also leaves behind an older, aging population.[2] Often times, this decrease and lack of a younger population leads to the closure of schools and various public services and makes the town and community less attractive to new residents and businesses.

Additionally, many small towns have been overly dependent on a single industry (such as manufacturing, agriculture, mining, etc.), which makes that community quite vulnerable when the industry struggles, stalls, or is removed altogether.

While less prevalent in Cairo specifically, the presence of malls, national chains, and retailers (Walmart, McDonald's etc.) and an overall shift to online shopping have also had a measurable effect on small town decline.[3] These types of businesses have made it easier to purchase goods and services in a more convenient fashion, slowly eliminating the need for small-town businesses. As a result, small towns have seen a decline in local sales and a considerable reduction of economic activity, growth, and jobs.

The deterioration of businesses, public services, environmental degradation, abandoned properties, dilapidated buildings, etc., cyclically exist as both the causes and effects of the lack of economic investment within these small towns. With no economic driver or activity, the property values remain low. From an outside perspective, low property values are a great thing as buying several lots is a cheap affair. However, for the residents, it has an adverse effect. For example, if the resident's mortgage is more than the value that their home can sell for, it can create a suffocating feeling of being stuck or trapped as they experience great difficulty selling their home or are unable to leave at all.

The next reason is the aging of small-town infrastructure such as roads, bridges, and water systems.[4] These are often costly to replace, and some small towns are unable to keep up with the necessary repairs and upgrades. This can also lead to high utility costs for the local residents.

A similar, more zoomed-out perspective of this topic is America's infrastructure system in general. People often say that 'it's not the destination, but instead the journey that matters the most'. However, when the focus of travel is convenience, speed, and efficiency, a lot of the journey part goes missing. With main streets that also functioned as highways, small towns used to be hotspots of tourism and activity. Now, many of them lie motionless, victims of abandonment, typically through the means of interstate and highway bypasses. The town of Cairo, Illinois is no different.

In an interview with a local radio station, Susana Mendoza, the Comptroller for the State of Illinois,

Research Findings+

spoke the following[5] about the dying Illinois town:

"Cairo has a special place in my heart...And I kind of think of Cairo, like in the movie Cars – Radiator Springs – and how it used to be great and then they cut the road off and it completely became dilapidated and forgotten."

When small towns experience a considerable loss in population, what often follows is a decrease in social interaction and engagement within the affected community. This can lead to a sense of disconnection and social isolation between residents, which can be particularly harmful to older residents who may be unable to leave their homes to access services and activities.[6]

Another harmful fallout of this decline is the loss of cultural heritage and identity. Small-town communities often have a strong sense of cultural heritage and identity, as well as a unique set of traditions and stories that define their community. This decline and deterioration of small towns have often resulted in a loss of local history, abandonment of historical buildings, and disconnection from history and traditions.

There are countless others that can be considered. However, for the purposes of this thesis, the factors and reasons above should be sufficient in fundamentally explaining the degeneration of small-town America. As stated above, this large-scale migration to more developed cities was the primary source behind the decline. However, that isn't to say that the growth in cities is a bad thing. In fact, the choices to move were predominantly opportunity related. People left in search of a better and wider selection of job prospects, housing, education, and cultural amenities.

If large cities were the goal, or more specifically, the abundance of opportunities within them, then should the priority of smaller towns be the creation of such opportunities? This may seem obvious, and I believe it is. So instead, a more important question to ask, is how this is actually achieved.

Understanding the Stigma+

One major challenge that I came across during my research is that there seems to be a considerable, underlying stigma around designing in small towns, almost as if it's off limits. Before proposing a revitalization of downtown Cairo, it is important to first understand this stigma and the main reasons behind it.

When revitalizing any urban area, one of the largest concerns that often comes with it is the risk of gentrification. Gentrification[7] is defined as: "a process in which a poor area (as of a city) experiences an influx of middle-class or wealthy people who renovate and rebuild homes and businesses, and which often results in an increase in property values and the displacement of earlier, usually poorer residents."

Gentrification is often associated with revitalization efforts in urban areas, as these efforts often involve the redevelopment of low-income neighborhoods into more upscale and desirable areas. While these efforts of revitalization can bring many benefits to a local community, such as increased investment and economic opportunities, they can also have a significant negative impact on existing, low-income residents if not done correctly.

According to the Urban Displacement Project, to fully understand the complex subject of gentrification, there are three things to first consider: historic conditions such as policies and practices, harmful disinvestment and investment patterns, and the impact on communities.[8]

Redlining was a discriminatory lending practice during the mid-20th-century in which banks and other lending institutions refused to provide loans or services to residents of certain neighborhoods based on the racial or ethnic makeup of that area. This practice had a significant impact on urban neighborhoods, particularly those that were predominantly African American, and contributed to the disinvestment and decline of these areas,

Research Findings+

making them more vulnerable to gentrification in later years. The federal government and banks labeled these predominantly minority neighborhoods as "risky" and "unfit" for investment.

White flight refers to the mass migration of the white population from urban areas to more suburban environments, often in response to the increasing racial and ethnic diversity of the cities. It occured in the mid-20th-century and was driven by a combination of factors, including concerns about declining property values, crime, and the general integration of African Americans into previously predominantly white neighborhoods. Additionally, several policies, such as the mortgage component of the GI Bill, helped fuel this 'white flight'. The GI Bill was aimed at providing benefits and support to the veterans returning from World War two through low-cost mortgage loans, tuition assistance, and unemployment compensation. However, racial discrimination limited the ability of black veterans to access the benefits of these policies and the ability to purchase homes in such neighborhoods.[8]

Urban Renewal was a mid-20th-century policy aimed at revitalizing declining urban areas. However, both urban renewal and the expansion of the U.S. highway system led to the mass clearance of countless homes, businesses, and central city neighborhoods, often of which were occupied by high concentrations of people of color. This further led to widespread disinvestment, and displacement caused by rising property values,of which disproportionately affected those of a lower income.[8]

Residents who get displaced, often ones who have been in that area a long time, are unable to stay and benefit from the new investments in housing, healthy food access, or transit infrastructure. This displacement can have long-term impacts on families. Cultural displacement is also a concern, as changes in the makeup and character of a neighborhood during gentrification can lead to a reduced sense of belonging for residents.

Gentrification is the major reason why thoughtful design is so important. A recent example of such controversy comes from the shores of Lake Michigan. Benton Harbor is a town of roughly 10,000 people, with the large majority of the population being either black or African American. The town has an overwhelming amount of poverty and is occupied by a predominantly Black or African American population. This is a very similar situation to Cairo, Illinois, albeit with a slightly larger total population.

'Harbor Shores' is a proposed large-scale mixed-use development that covers over 500 acres along the shores of Lake Michigan. It was proposed to revitalize the area and bring new investment and economic opportunities to the region. The development is comprised of multiple different components, such as residential, commercial, and recreational areas, with the primary ones being a high-end resort and golf course.[9]

Harbor Shores is designed to help the underprivileged, mostly black communities around it. The developers saw it as a "single, signature project to drive economic development and bring social change to Benton Harbor," according to one of its promotional videos.[10]

Currently, much of the development has been completed, including the golf course, and several residential and commercial areas. So far, the development has attracted new residents and businesses to the area and has helped provide a boost to the local economy through the creation of new jobs and tourism. The development has also helped the area by building new homes and businesses and renovating existing structures.

However, despite these various benefits, the Harbor Shores development has also faced severe criticism from various members of the local community. One of the primary reasons for concern is the impact of the development on low-income residents, as some of them fear they may be displaced due to gentrification.

Thesis Question+

How can architecture help to revitalize the dying, small town of Cairo, Illinois?

Figure 8

Research Findings+

Outside of the boundaries of the Harbor Shores development is the poorest city in the entire state of Michigan. This stark contrast is 'intentional' and part of a social engineering strategy aimed to bring individuals of different ethnicities and classes together.

According to Marcus Robinson, the president of the Consortium for Community Development, *"The intermingling that shifts a culture, makes it more upwardly mobile and creates more striving-type sensibilities naturally occurs when you bring people of different races and classes together...This could be a model for African-American towns...I want to see this turned into a great place to live, work and play and have it be predominantly black. A great place to play golf, go to the beach, with great schools, a place that turns out scholars, athletes, and artists. A place that's banging, as they say."*

There exist a lot of people who are skeptical of placing the hope of Benton Harbor on a golf course. Many are also concerned that this development will not truly revive the town, but instead only further accelerate the town's division into two distinct communities. Only time will tell if the $500 million, high-end golf resort will solve all the problems that this town has.[10]

Along the same line of gentrification, a specific point to consider is not being mindful of the affordability and livability of the revitalized area. Efforts to revitalize a small town, or any community in general should aim to improve the quality of life for all residents, including those who may be disabled, have lower income etc.

If these aspects aren't taken into account, revitalization efforts may be perceived as being out of reach for many residents and may not be supported by the community.

Besides gentrification and displacement, another reason is the simple lack of knowledge of the project, its goals, design, outcomes etc. could potentially lead to misunderstandings and/or negative perceptions about the project.

Since small towns are intrinsically defined as "small" this could also lead to concerns regarding loss of identity or cultural heritage. If an outside development rushes in without engaging the public in the design process, then the community could feel that their voices, concerns, needs, perspectives, etc. are not being heard or considered.

Like in the Harbor Shores example, if the design or vision of the project does not meet the pressing needs of the community reflect the unique characterstics of the area, residents may be more likely to resist the project.

Small Town Revitalization+

The revitalization of these small towns has grown into a rather important issue, as it has the potential to reverse the trend of decline and provide various benefits to the affected communities.

Small town revitalization (STR) is a somewhat blanket term that refers to the general approach or process of rejuvenating the physical, social, and economic assets of a small town. These efforts often involve various elements and strategies that are aimed at creating a more vibrant, thriving, and attractive place to live, work, and visit.[11]

In most cases, rural revitalizations focus their efforts within downtown areas. This is because downtown districts exist as the economic, historic, and cultural heart of these rural communities.[12,13] Due to their central location and easy access, these downtown areas or 'town centers' also have the highest concentration of businesses, restaurants, historic buildings, and an overall higher presence of economic activity compared to the rest of the town.

In 2015, the Houston-Galveston Area Council (H-GAC) created a a general guide for succes-

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fully revitalizing rural downtowns. In this guide, they outlined four categorical methods to help small towns leverage their own assets and help turn their downtown areas into vibrant and attractive places for both residents and visitors alike.

The first aspect is creating a 'community-based vision.' As learned in the stigma section, engaging the community in the design process is very important. When aiming to revitalize a small town, it is crucial to understand the existing vision that a community has for their downtown, or help create one with them if one doesn't exist.[12]

Some of the first things needed for developing such vision, or if simply testing the viability of a new development, is to conduct a market analysis of the area and inventory what assets the community has. This can be done through various ways such as public meetings, surveys, interviews, local media, etc. These interactions with the existing community can help to inform the design to make it more meaningful to the people that live there.

H-GAC stated that this community-based-vision should be comprehensive, actionable, supportable, and measurable. This means that the plan should consider the entire downtown and a full range of issues, include long and short-term strategies, be supported by local stakeholders to help with implementation, and include quantifiable data to track progress.

The second element is creating 'attractive streetscapes'. Since the streets are typically the first point of contact for tourists, making them inviting, attractive, and walkable is essential for getting them to spend more time in the downtown area. Having an inviting walking experience, attractive street furniture, an abundance of vegetation, ample lighting, aesthetic building facades, and public art are all great examples of how to do this.[12]

The third aspect is to have a 'variety of uses.' Small towns should want their downtown areas to have a mix of several different building types. Public spaces such as retail, restaurant, and entertainment areas would occupy the street level, and more private uses, such as office and living spaces would reside on the upper floors above. Having a variety of uses allows downtown areas to become day-long destinations for its users. When there are lots of things to see and do, people are more likely to stay longer and explore more. For instance, someone might go to a coffee shop in the morning, a store in the afternoon, and a local restaurant in the evening. Having a variety of businesses in the downtown area can also make it feel lively and exciting and can lead to more spending and economic growth.[12,14,]

The fourth and final element is effective marketing which essentially means establishing their unique identity. Having an identity or brand helps the downtown area and town as a whole, stand out from other communities. This involves identifying what makes their area special and interesting, such as its history, architecture, cultural events, etc., and promoting those aspects. By establishing and marketing its unique identity, a community can bring in new visitors and investments and improve the image of its downtown.

In 2009, a study examined the effects of tourism on a small town in New Hampshire that had a population of roughly six thousand people. The study found the residents of this community believed the economic benefits that tourism brings are the most important factor. The economic benefits were the creation of jobs, the generation of new income, the growth in tax revenue, and the improvement in living conditions. Social benefits included the preservation of the existing traditions and culture, improvement of social welfare and general quality of life, and an increased variety of shopping and recreational opportunities.[15]

While the benefits of a tourism-based economy were welcomed by the residents, there were also negative consequences that followed. The economic costs included increased tax burdens for developing tourist infrastructure, inflation, rising

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land and housing costs, overinvestment of resources and development budgets in tourism, and immigration of labor that may have an impact on local employment opportunities or even the environment.[16] Some of the social consequences saw an increase in crime, prostitution, confrontations between tourists and locals, and modifications to traditional traditions and ways of life.[15]

Tourism can be, and often is, a powerful and effective tool in helping to revitalize a dying, small town such as Cairo. However, while the benefits can be great, it is important to also consider and balance the potential consequences that can come with it. If not done correctly, tourism can hinder revitalization efforts and ultimately harm the community.

Contextual Design+

Another critical aspect to consider when trying to revitalize a small town is the concept of contextual design. Another term for this is Contextualism[17] which refers to the "interaction between new buildings and their surroundings, as well as the challenge of integrating new and existing structures to establish congruence and continuity."

Contextual design, at its core, is the approach of thoughtful architectural design with sensitivity towards the unique characteristics of a specific place and community. This approach takes into account specific aspects such as its culture, traditions, history, natural resources, etc., and uses these elements to inform the design and create a revitalized and sustainable community.

Contextual design[18] is split into three aspects: vernacular architecture, regional architecture, and critical regionalism.

The first key aspect is 'vernacular architecture' which is a type of design that is a direct response to a specific time and place. It responds to factors such as the local climate, cultural heritage, demographics, economic conditions, availability of resources for the design process. By understanding these aspects, the design can better reflect the unique characteristics and needs of a certain context.

The next aspect is 'regional architecture.' The concept of regional architecture was developed in the late 1960s as a response to the growing concern about the loss of cultural identity in architecture and the growing tension between local culture and globalism. Regional architecture essentially means that the design should try to balance the traditions and culture of the local community with the new ideas and styles associated with other places to help create the best, and most appropriate design possible.

The third aspect is 'critical regionalism'. This is a very similar concept as it seeks to achieve universality in the design by mixing new, modern ideas with contextual references to create a sense of place. Regional architecture completely focuses on design that reflects the local culture and context. However, critical regionalism is slightly different as it instead seeks a solution that is not only meaningful to the people to the target community, but also has design qualities that people everywhere can appreciate.

- Community Involvement: Incorporate the perspectives and ideas of local residents and businesses in the design process.
- Contextual Assessment: Thoroughly evaluate the local context through cultural, historical, and environmental lenses to help inform the design process.
- Cultural Preservation: Integrate elements of the town's cultural heritage into the design to help conserve its history and character.
- Context-Specific Design: Create spaces that highlight the town's unique character and identity to help people better connect with Cairo.

In order to create this sense of place and a strong sense of community, contextual design emphasizes the importance of engaging the local residents and businesses to inform the design. By involving

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How can architecture help to revitalize the dying, small town of Cairo, Illinois?

Figure 9

these groups in the development process, contextual design seeks to create architecture that reflects the needs and desires of the community, in hopes of fostering a sense of ownership and pride.

Mixed-Use+

As the core and primary focus of this proposed solution, it is important to more thoroughly understand the mixed-use typology first. According to the Urban Land Institute (ULI) Mixed-Use Development Handbook,[19] 'mixed-use' is generally defined as a development that:

- Offers at least three major sources of income (such as retail, entertainment, and residential, spaces.)
- Encourages the integration, density, and compatibility of land use
- Creates a walkable community with continuous pedestrian connections.

Mixed-use developments can typically be spatially classified into either vertical mixed-use, horizontal mixed-use blocks, or mixed-use walkable neighborhoods.[20] As one of the more common types of mixed-use, a vertically organized mixed-use building means it contains more than one uses within the same building. The lower floors are more public areas such as shops and restaurants, while above that could be offices or apartments. Vertical mixed-use is a great option as it is an efficient use of space, and can promote a sense of community as both the workers and residents are able to interact more.

Horizontal mixed-use blocks contain single-use buildings on separate parcels. Typically, the block is walkable and includes multiple corridors to help improve access for users. This is a great way to avoid funding and coding challenges within denser urban settings. In less densely populated areas such as small towns, horizontal mixed-use blocks are especially useful as they allow for an easier, cheaper and more efficient construction process while still maintaining the benefits of shared utilities and amenities for residents. Additionally, since the uses are split across separate parcels, this offers a little more flexibility in the design.

A mixed-use walkable neighborhood is essentially a combination of vertical and horizontal mixing, spread across an entire neighborhood hub or town center. Since it covers a larger area, it can help create a sense of community that can reach a larger radius of the town. Another intrinsic advantage is that it can encourage more pedestrian activity such as walking or biking.

A mixed-use development brings many benefits to a community. For example, in their 'Mixed-Use Zoning Guide,' the Metropolitan Area Planning Council (MAPC) specifically outlined several of these benefits.[21] A few that are particularly relevant and beneficial to small towns such as Cairo are:

- Provides more housing opportunities and choices: A mixed-use development allows for a variety of housing types, such as affordable housing, that cater to various needs and incomes. This helps create a more diverse and inclusive community.
- Enhances an area's unique identity and development potential: Integrating different uses and activities, a mixed-use development can help foster a vibrant, active, and welcoming environment. This also helps create a sense of place, develop community pride, and works to also attract new visitors and investors.
- Promotes pedestrian and bicycle travel: Incorporating a mixed-use development encourages walking and biking by creating a compact and accessible environment, where the services and amenities are within walking distance.
- Promotes a sense of community and place: A mixed-use development can foster social interactions and connections between residents by providing areas for gathering, recreation, and cultural activities. This can help to create a sense of shared identity among residents.

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- Encourages economic investment: By drawing in new businesses, providing jobs, and raising property values, a mixed-use development has the potential to stimulate the local economy. This would help make the area more active and stable.
- Increases revenues: A mixed-use building or development can help increase the overall income of the town by raising tax revenues, and boosting local spending.
- Promotes a village-style mix of retail, restaurants, offices, civic uses, and multifamily housing: Combining commercial, residential, and public uses can produce a lively and diversified environment that fosters a village-like atmosphere.

Sustainable Design+

Another key focus of this thesis is the integration of sustainable design as part of the solution. According to the U.S. General Services Administration (GSA):

"Sustainable design seeks to reduce negative impacts on the environment, and the health and comfort of building occupants, thereby improving building performance. The basic objectives of sustainability are to reduce consumption of non-renewable resources, minimize waste, and create healthy, productive environments."

The GSA also identified six fundamental principles of sustainable design to use as a guide. These principles include: optimizing site potential, reducing consumption of non-renewable energy, utilizing environmentally friendly products and materials, protecting and conserving water, improve quality of the indoor environment, and optimizing operational and maintenance methods.[22]

This is an interesting topic in that one would think that introducing innovative design and sustainability practices wouldn't be appropriate or even work in small towns such as Cairo. However, I believe this can actually have the opposite effect.

In 2010, the International City/County Management Association (ICMA) conducted a detailed survey of over 1,800 small and rural communities to identify which sustainable activities, goals, and policies had been achieved and utilized in each town. This report found that municipalities having less than 5,000 residents, typically adopted one-third as many policies as larger towns with over 100,000 residents.[23]

However, the report emphasized that even these smaller towns with populations of less than 5,000 (such as Cairo) can play a crucial role in sustainability efforts, and do it in a way that can positively affect the local economy.

As discussed near the beginning of this research, small towns and rural communities cover a large part of the nation's total land area. While the governments of these smaller municipalities face challenges such as limited budgets, resources, and a lower technical capacity, they actually hold an advantage over big cities. In these larger cities, sustainability goals are harder to reach due to their extensive and complex systems of government. However, smaller towns can actually benefit from being 'small' due to their ability to be nimble, adaptable, and make quick, effective decisions.[23]

Additionally, the ICMA report found that sustainable strategies can be incorporated within these small towns with little upfront cost and risk to the community. Things like conducting energy audits, improving the weatherization of buildings, upgrading to energy-efficient street lighting, etc. a great ways to showcase the economic and environmental benefits of green solutions to the residents, which will make it easier for them to accept additional solutions that have more long-term benefits.

One of the most widely recognized rating systems for sustainable buildings is LEED (Leadership in Energy and Environmental Design). Created by the U.S. Green Building Council (USGBC), LEED provides a framework for designing healthy, ef-

ficient, carbon and cost-saving sustainable buildings.[24]

A LEED certification is a globally recognized symbol of environmental accomplishment. A project receives a LEED certification by meeting established qualification credits and criteria that cover a range of aspects such as carbon, energy, water, waste, transportation, materials, health, and indoor environmental quality. The Green Business Certification Inc. (GBCI) verifies and reviews projects and awards points that correspond to one of the four levels of certification: *Certified, Silver, Gold, and Platinum*.[24]

LEED aims to create buildings that:

- Help mitigate climate change
- Improve human health
- Conserve and restore water resources
- Improve the quality of life for communities
- Encourage sustainable materials and regenerative life cycles
- Protect and promote biodiversity and ecosystem services

It has been widely proven that LEED-certified buildings save money, reduce carbon emissions, improve overall efficiency, and make places and buildings healthier for their users.[25] The integration of LEED in small towns like Cairo isn't as futuristic or far off as it sounds. In fact, the town of Greensburg, Kansas exists as a great leading example for Cairo to follow.

In 2007, Greensburg, Kansas was leveled by an EF-5 tornado that destroyed 90% of the town's structures and buildings. Greensburg had a total population of roughly 1,500 people when the tornado hit. When it came to rebuilding their town, the community saw an interest and opportunity to turn Greensburg into a model green community.[26]

To achieve this "green revival", the residents created a "Sustainable Comprehensive Plan".[27] Within the plan, the community outlined several goals that will serve as a sustainable roadmap for the city and help balance the economic, ecological, and social impacts of this revitalization:

- *Community:* A progressive community that offers urban services within the unassuming feel of a rural, Midwestern community.
- *Family*: A community that provides opportunities for its young people in the way of jobs, education, and recreation as reasons to stay in Greensburg.
- *Designing our Future:* Sustainable Landscapes: Greensburg Sustainable Comprehensive Plan.
- *Prosperity:* A community where entrepreneurial spirit, customer service, and a sustainable economy permeate the business sector and where residents, travelers, and tourists enjoy a full line of locally-owned businesses that provide jobs and services to an exceptional example of small-town America.
- *Environment:* A community that recognizes the importance of the natural environment and balances the need for growth and economic development with the maintenance and improvement of the environment.
- *Affordability:* An up-to-date, affordable rural community where housing plans and strategies incorporate energy-efficient design and materials and serve as a regional and national model for integrating residents of all ages and needs with services of all kinds.
- *Catalysts:* The rebuilding process starts with the most stimulating structures and spaces.
- *Growth*: A community that opens its doors to new residents and visitors without affecting the values and lifestyles of its current residents.
- *Renewal*: A community that makes proactive decisions that use this opportunity to reverse the decline of the community and build a progressive city with a strong future.
- *Water*: Treat each drop of water as a precious resource.
- *Health*: Improve the quality of life by promoting a healthy and active lifestyle.

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Figure 10

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- *Energy*: Promote a high level of efficiency in new construction and look to renewable options for energy generation.
- *Wind*: Greensburg's vast wind resources are part of an emerging economy and should be harvested.
- *Built Environment:* Build a town that encourages interaction between residents, welcomes guests, and serves as a model community. New development should be durable, healthy, and efficient. City projects will lead the way by becoming examples of green practices that are built to last.

One of the core components of this plan was making all the city buildings LEED-certified. These buildings included the city hall, library, hospital, and school. That same year, Greensburg became the first city in the United States to require that all city-owned buildings have a LEED-Platinum certification.[28] Buildings implemented strategies such as passive solar design, natural ventilation, salvaged or recycled materials, energy-efficient lighting, etc.

In addition to improving the energy efficiency of the buildings, the plan also emphasized the overall focus on and transition towards renewable energy. In order to achieve goal of "100% renewable energy 100% of the time," the town agreed to construct a wind farm. This included the construction of containing ten turbines that each generate 1.25 megawatts.[29]

This wind farm was designed to be able to supply all of the energy needs of the town, even at peak usage. Additionally, many homes and businesses have also installed solar panels and windmills for their personal use.

Another way of helping to reduce the impact on the environment was to modify the land use and zoning in order to create a more walkable town. To help prevent uneven growth and density, development efforts were to be focused on the core or center of the city and slowly grow outwards.[30]

Adding "green corridors" throughout the town as well as separating previously residential-only blocks, into either single residential areas or denser village-style areas, would also help to improve walkability.

Some of the other key aspects that were part of this sustainable revitalization plan for Greensburg included water conservation systems and measures, recycling programs and buildings, and the promotion of sustainable transportation such as walking, biking, and electric vehicles, etc.

Additionally, the utilization of sustainable practices can also provide several other benefits.[31] As outlined by the NewSchool of Architecture and Design, some of these benefits include:

- Sustainable architecture improves the indoor environment by improving air quality, lighting and thermal conditions and have resulted in better health and lower stress for its users.
- Conserving water through efficient plumbing fixtures and using alternative water sources such as rainwater, helps decrease water waste.
- Buildings that utilize eco-friendly materials can help reduce the risk of allergies and diseases, helping to improve the overall health of its users.
- While the upfront cost is typically higher than traditional architecture, the savings from lower maintenance costs and reduced energy and water consumption, easily help offset this over the long term.
- Since green design specifically takes advantage of natural energy sources such as the sun, wind, water, etc. sustainable buildings have a considerably reduced impact on the environment. Additionally, this decreased dependence on harmful and costly non-renewable resources also helps reduce the carbon footprint.
- Utilizing sustainable materials such as recycled wood or brick can further help reduce carbon footprints and conserve natural resources. These materials are often also more durable, last longer, and require less maintenance.

Research Findings

Relevant Frameworks

To get a better understanding of how to approach revitalizing a small town or community, we will examine and explore some of the theories and frameworks that already exist within this realm of revitalization and redevelopment. These include New Urbanism, Sustainable Urbanism, Transformative Placemaking, EPA Smart Growth, Main Street America, and Placemaking.

New Urbanism

One of the more well-known theories or frameworks is 'New Urbanism'. The Congress for the New Urbanism (CNU) describes this term as:

"... a planning and development approach based on the principles of how cities and towns had been built for the last several centuries: walkable blocks and streets, housing and shopping in close proximity, and accessible public spaces. In other words: New Urbanism focuses on human-scaled urban design." [32]

It emphasizes the creation of walkable, livable cities and communities that promote environmental sustainability, diverse housing options for residents, and foster social interaction between users.

The origins of New Urbanism can be roughly traced back to the late 1980s in response to the rising concern of urban sprawl.[33] The general focus on the automobile in terms of suburban development created harmful environments that lacked diversity, were disconnected from urban centers, and didn't promote walking or cycling.

The core elements of New Urbanism are the creation of walkable, transit-oriented communities, a focus on public spaces, and a diverse selection of housing options. [34]

Walkable communities were designed to include mixed-use developments that were located within short, walkable distances from each other. This not only promoted physical well-being for its residents but also reduced the need for cars, therefore lowering greenhouse gas emissions.

The focus on public spaces was aimed to create more opportunities for social interaction through physical spaces such as parks, plazas, interactive streetscapes etc. These spaces would serve as the heart of the community and work to promote a sense of community.

New Urbanism also recognizes the importance of a diverse selection of housing options such as single-family homes, townhouses, apartments etc. These housing options would also include a range of price affordability that helps to promote accessibility and an inclusive atmosphere for that community.

In the 'Charter of the New Urbanism', the CNU outlines various specific principles that guide their general policies, development strategies, and urban planning and design.[35] These principles can be summarized into the following points:

The Region: Metropolis, City, and Town

- Metropolitan regions have clear geographical boundaries shaped by natural features such as topography, waterways, and regional parks.
- Public policy should consider the importance of metropolitan regions and their relationship with surrounding areas and landscapes.
- Development should focus on utilizing existing urban space instead of expanding outward, preserving resources and community unity.
- New development should blend seamlessly with existing areas, offering a balance of employment and housing opportunities while respecting historical patterns and boundaries.
- The physical design of metropolitan regions should prioritize alternative, public transportation options, minimize reliance on cars, and support an inclusive and stable regional economy.

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The Neighborhood, The District, and The Corridor

- Neighborhood design is important for metropolitan development and should involve citizens.
- Neighborhoods should be compact, pedestrian-friendly, and mixed-use, while districts should have a single focus.
- Daily activities should be within walking distance and streets should prioritize pedestrians over cars.
- Housing diversity should bring together different ages, races, and incomes to strengthen the community.
- Transit corridors can revitalize urban centers, and building densities and uses should be near transit stops to encourage public transit use.

The Block, The Street, and The Building

- Designing streets and public spaces for shared use is a key aspect of urban architecture and landscape design.
- Architectural projects should be integrated into their surroundings, regardless of style.
- Urban revitalization requires balancing safety and security with accessibility and 'openness'.
- Contemporary metropolises must accommodate automobiles while respecting pedestrians and public spaces.
- Building design should reflect local climate, topography, history, and practices, and civic buildings and public gathering places should have unique designs that reinforce community identity and democratic culture.

The applications of these design and development principles can be universally applied in any scale and context. Overall, New Urbanism is a great tool that includes various strategies that are relevant to the revitalization efforts in small towns such as Cairo. So far, so good. However, while it is a great tool, it does not come without faults.

One of the main criticisms of New Urbanism is high costs.[33] Communities that emphasize New Urbanism principles are often expensive to live in due to the high construction costs and increased regulation. A consequence of this is that it creates a barrier of inaccessibility to those who can't afford it. This has major implications for the people of Cairo due to a sizeable amount of population living below the poverty line.

One of the best ways to address this issue is by using sustainable and low-cost materials within the design. Additionally, the development should also collaborate with the local government to help identify and provide incentives to support the creation of mixed-income communities in small towns like Cairo and help provide affordable housing options as well. This can help to promote inclusiveness and accessibility within the development by welcoming a more diverse range of residents.

Sustainable Urbanism+

Due to the term being established relatively recently, the definition of 'Sustainable Urbanism' is not yet universally agreed upon. However, the definition I will be using for this thesis comes from the book: 'Sustainable Urbanism: Urban Design with Nature' by Douglas Farr.[36] He defines Sustainable Urbanism as *"walkable and transit-served urbanism integrated with high-performance buildings and high-performance infrastructure".*

Sustainable Urbanism encourages design that addresses the needs of the present without compromising the ability of future generations to address their own needs. Sustainable Urbanism, in general, is similar to New Urbanism in its approach to urban design. However, it takes a broader and more comprehensive approach in that it considers the overall social, environmental, and economic sustainability of cities as well as the traditional principles of urban design.

The core concepts and strategies of Sustainable Urbanism are compactness and biophilia. Compactness refers to the density of an area, and biophilia refers to the level of human access

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How can architecture help to revitalize the dying, small town of Cairo, Illinois?

Figure 11

Research Findings+

to nature.[37] Other aspects that are significant to sustainable urbanism are a holistic approach, environmental sustainability, social sustainability, economic Sustainability, Compact, Walkable Communities, Green Infrastructure, Sustainable Transportation, Sustainable Land Use, and a Life Cycle Assessment. These can be summarized into the following points.

- *Holistic Approach:* Sustainable urbanism considers the interconnections between the built environment, natural environment, and social and economic systems. It seeks to create cities that are not only environmentally responsible, but also socially equitable and economically prosperous.[38]
- *Environmental Sustainability:* Sustainable urbanism aims to reduce the environmental impact of cities through green infrastructure, fuel, resources, energy-efficient buildings, and sustainable transportation systems. The goal is to improve air and water quality, reduce greenhouse gas emissions, conserve resources, and protect biodiversity.[39]
- *Social Sustainability:* Sustainable urbanism seeks to address social inequities and support the well-being of all people, regardless of race, income, or social status. This includes providing affordable housing, promoting access to transportation and essential services, and fostering community engagement.[40]
- *Economic Sustainability:* Sustainable urbanism aims to promote economic prosperity while also ensuring that the built environment is resilient and adaptive to the challenges of a rapidly changing world. This includes creating jobs, driving economic growth, and reducing resource use through efficient design and construction.[41]
- *Compact, Walkable Communities:* Sustainable urbanism favors compact, walkable communities that reduce vehicular dependence, improve air quality, and support healthy living.[42]
- *Green Infrastructure:* Sustainable urbanism promotes the integration of green spaces and natural systems into the fabric of the city, such
- -as parks, gardens, native plant species, and green roofs, which improve air quality, reduce urban heat island effects, and promote biodiversity.[43]
- *Sustainable Transportation:* Sustainable urbanism seeks to create transportation systems that are safe, efficient, and accessible, reducing traffic congestion and promoting the use of transportation methods such as walking and cycling.[44]
- *Sustainable Land Use:* Sustainable urbanism considers the relationship between both the built environment and the natural environment and promotes sustainable land use through land use planning, urban agriculture, and the preservation of natural ecosystems.[45]
- *Life Cycle Assessment:* Sustainable urbanism also considers the entire lifecycle of the built environment, from construction to demolition, and reduces its environmental impact by taking the life cycle analysis into account.[46]

Despite the general, widespread support for Sustainable Urbanism, there can be potential roadblocks that need to be overcome before realistically implementing these concepts.

I think the main issue with Sustainable Urbanism is one that is also shared with New Urbanism: *high development costs*. One of the primary sources for the high upfront investment, is the creation and utilization of green buildings, infrastructure, and construction methods. These structures and building methods often use premium, sustainable materials, products, and processes, which inherently increases the cost. While the use of sustainable buildings and infrastructure has been proven to cost less over their lifespan, the initial costs can still be off-putting to many.[47] One article mentions that:

"The perception that initial costs are higher may at least be partly due to the inaccessibility to green development knowledge, materials, and contractors. This is especially true in certain markets across the U.S., where a critical base of providers

has not surfaced to meet this need." [48]

This lack of knowledge about sustainable practices and benefits can be a significant hurdle to overcome, especially in more rural communities like Cairo, where information is even more sparse.

Some municipalities try to help developers further offset these costs by providing incentives such as tax breaks or grants. However, these incentives are usually insufficient and don't help with the additional costs that may arise when working with sustainable projects.[49]

There are a few ways to help to mitigate this high upfront cost and make it more accessible to smaller town communities, such as Cairo. These could be to use local materials and resources, utilize cost-effective, flexible solutions such as modular design and prefabricated elements, or even slowly implement these principles over time through phases.

Smart Growth+

Another widely recognized initiative is the Smart Growth program. The Smart Growth program is a federal program created by the Environmental Protection Agency (EPA) to help promote sustainable growth and development in local communities. It was established in response to the growing demand for more vibrant, livable, healthy, and environmentally responsible communities.

The Smart Growth Network (SGN) is a "diverse network of private, public, and nonprofit partners that seek to encourage better development decisions for those who want to incorporate smart growth within their own community.[50] The SGN created the following ten fundamental principles to guide smart growth strategies to develop and sustain thriving neighborhoods and communities:

- *Mix land uses:* Promote the mixing of land uses, such as residential, commercial, and office uses in the same general area. This is -done to encourage more compact and walkable neighborhoods. An example of this could be mixed-use development like the proposed one in Cairo that includes apartments or condos, office space, and retail shops, all within the downtown area, keeping everything within a short walking distance.
- *Take advantage of compact building design:* Encourage compact building design, such as higher density housing, mixed-use zoning, and smaller lot sizes, to make more efficient use of the given land and to reduce sprawl. One example is the construction of an affordable housing development with smaller lot sizes and higher density, such as townhouses or multi-family buildings.
- *Create a range of housing opportunities and choices:* Encourage a range of housing opportunities and choices, including things such as affordable housing, to meet the needs of a diverse population. A good example is mixed-income housing development that includes a mix of market-rate, affordable, and workforce housing options, is one such example.
- *Create walkable neighborhoods:* Foster the creation of walkable neighborhoods, that includes sidewalks, bike lanes, and other infrastructure designed to encourage physical activity. An example of this is a neighborhood with a pedestrian-friendly downtown area, with a well-connected network of sidewalks and bike lanes.
- *Foster distinctive, attractive communities with a strong sense of place:* Support the creation of communities that are aesthetically pleasing and that have a strong sense of place, such as historic districts or culturally significant neighborhoods. A good instance of this is a neighborhood that celebrates its unique history and culture through public art, festivals, and other events.
- *Preserve open space, farmland, natural beauty, and critical environmental areas:* Help promote the preservation of open spaces, farmland, natural beauty, and critical environmental areas. This protection of natural areas and re-

- -sources help to maintain the quality of life in communities. An example of this is a community that preserves natural habitats, green spaces, and parks, and encourages the use of green infrastructure to manage stormwater runoff.
- *Strengthen and direct development towards existing communities:* Strengthen and help direct development towards existing communities rather than building new developments on the outside fringe of these areas or cities. One example of this is a community that revitalizes existing buildings and neighborhoods and that encourages infill development on vacant or underutilized land.
- *Provide a variety of transportation choices:* Smart growth principles promote a wide variety of transportation choices, including public transit, biking, walking, and driving. A community that has a well-connected public transit system, bike lanes, and sidewalks, and encourages car-sharing and other sustainable transportation options, is one such example of this.
- *Make development decisions predictable, fair, and cost-effective:* Encourage decisions that are viable, fair, and cost-efficient to help generate private investment and promote economic stability. An example of this is a community that has a streamlined permitting process, predictable zoning regulations, and encourages public-private partnerships.
- *Encourage community and stakeholder collaboration in development decisions:* Increase community and stakeholder collaboration in development decisions to ensure that community needs and values are taken into account. One instance of this is a community that holds public meetings and workshops to engage community members in the planning and development process and encourages the formation of community groups and associations to represent diverse interests.

Overall, the Smart Growth program is a great tool and includes several good strategies and guidelines that I believe can be successfully applied to dying small towns such as Cairo, Illinois.

Main Street America+

The Main Street Approach is a community-based revitalization initiative that provides a practical and flexible framework for transforming downtown areas. It was created by Main Street America (MSA) which is an organization that helps revitalize older and historic commercial districts and communities, and has been doing so since the 1980s.[51] This approach is designed to be easily tailored to local conditions and help communities get started with revitalization efforts that continue to grow as more time passes.

This approach is fundamentally centered around 'Transformational Strategies', which are focused and deliberate plans for revitalizing downtowns and economies. These strategies are typically generated through engagement with the community and an in-depth market analysis of the area. Transformational Strategies help guide the revitalization program's efforts and are often designed to respond to an underserved market or create a prominent destination.[52]

The Main Street Approach also offers ready-to-use Catalyst Strategies that broadly fall into one of two categories: those that are focused on a specific customer segment and those which are focused on an industry, product, or service segment. Examples of customer segments include workers and residents, families, and the elderly, while examples of industry segments include agriculture, arts, entertainment etc.

These Transformation Strategies are implemented through four comprehensive work areas, which MSA calls the 'Four Points'. These points are *Economic Vitality, Design, Organization, and Promotion*.

The first aspect is centered around the *economic vitality* of a downtown, community, or district. The focus is on enhancing the role of the district as an

Thesis Question+

How can architecture help to revitalize the dying, small town of Cairo, Illinois?

Figure 12

economic hub and promoting a diverse local economy.[53] Some of the strategies that are used to achieve this include:

- Fostering entrepreneurship and small business growth.
- Encouraging investment in real estate and business ventures.
- Diversifying the local economy and exploring new economic opportunities.
- Boosting local shopping and tourism.
- Providing support and technical assistance to businesses to create a favorable business environment.

The second of the four points is *design*. The objective of this point is to enhance the functionality and physical appearance of the district, such as improvements to buildings, streetscapes, public spaces, and other physical features. This works to create an attractive built environment and a prominent sense of place that attracts and appeals to customers and tourists.[54] Some of these strategies include:

- Improving the look of buildings and public spaces.
- Supporting the preservation and restoration of historic structures and public spaces.
- Enhancing the public realm with pedestrian-friendly spaces, public art, and well-designed streetscapes.
- Encouraging public participation in design decisions and supporting community-led design efforts.
- Promoting mixed-use development that incorporates residential, commercial, and public areas.

The third point of the Main Street Approach is *organization*. This aspect focuses on building a strong and sustainable community-based revitalization effort. The goal of the organization point is to create a network of committed volunteers, staff, and stakeholders who are dedicated to revitalizing the district.[55] The main strategies for organization include:

- Establishing a strong, well-organized, and sustainable community-based organization.
- Building partnerships and collaborations between community organizations, government, and businesses.
- Encouraging volunteer involvement and the general capacity for community revitalization.
- Providing training, technical assistance, and support to community-based organizations and volunteers
- Building effective communication strategies to engage residents and stakeholders in the revitalization process.

The last point of this approach is *promotion*, which focuses on marketing the unique characteristics and assets of the district to potential visitors, customers, and investors. The aim of this is to increase the overall visibility of the district and generate more foot traffic, sales, and investment.[56] The following are some of these main promotional strategies:

- Developing a clear and compelling message that highlights the unique characteristics and assets of the commercial district
- Building a strong online presence through websites, social media, etc.
- Partnering with local media outlets to promote district events and activities
- Encouraging local pride and community involvement in promoting the commercial district
- Developing and executing effective marketing and promotional campaigns.

Applying the Main Street Approach to the town of Cairo, Illinois requires several aspects to be considered. These could include encouraging community involvement, understanding and addressing the historical context, incorporating sustainable design principles, and utilizing or preserving existing buildings and spaces if possible. Otherwise, this is also a great tool with several useful strate-

gies that can help with the revitalization of Cairo.

Placemaking+

The last framework we will explore in this thesis is Placemaking. One definition[57] comes from Placemaking Chicago, where they define it as:

"...A people-centered approach to the planning, design, and management of public spaces. Put simply; it involves looking at, listening to, and asking questions of the people who live, work, and play in a particular space, to discover needs and aspirations. This information is then used to create a common vision for that place."

According to The Project for Public Spaces (PPS), placemaking is not a new term or idea. In fact, it has been around for decades. It began to emerge in the 1960s when urban pioneers such as Jane Jacobs and William H. Whyte introduced the idea of designing cities around people, and not just cars and shopping centers.[58]

The Project for Public Spaces also described placemaking as a way for people to work together to improve the places they share by changing public spaces to make them more valuable for everyone. It makes it easier for people to find new ways to use a place, paying special attention to the physical, cultural, and social identities that make a place unique and help it change over time.

According to PPS, placemaking is both a philosophy and the actual process that seeks to revitalize underutilized public spaces so that they can better serve the people who live, work, and play in them.[59] This process can be used for either updating an existing space or creating a brand new one from the ground up. The placemaking process is context-dependent and does not always proceed in the same way. However, PPS still devised a five-stage placemaking process to involve more people in observing, planning, and shaping their spaces and communities:

- *Define Place & Identify Stakeholders:* The first step in placemaking is to identify the space to be transformed and its stakeholders. In this step, representatives from public, private, and civic sectors identify the main issues different groups face and a place or places to focus placemaking efforts.
- *Evaluate Space & Identify Issues:* Participants assess how a space is used, how it can be improved, and what the main issues or challenges are. Placemaking Workshops are effective at using stakeholders' knowledge, intuition, common sense, and input. Understanding the space and its challenges is the goal.
- *Place Vision*: Key stakeholders create a vision of the target area based on insights from the 'Placemaking Workshop'. The vision includes a mission statement of shared goals, a definition of how the space will be used and by whom, a description of its intended character, a concept plan for how the space could be designed, successful examples of similar spaces, and an action plan for short-term and long-term improvements.
- *Short-Term Experiments:* Implementation is the most crucial step in placemaking. Good public spaces don't happen overnight, and people don't need all the answers to improve. By implementing and evaluating "Lighter, Quicker, Cheaper" (LQC) projects, the space can grow incrementally. LQC projects are quick, cheap, and reversible.
- *Ongoing Reevaluation & Long-Term Improvements:* Creating great places is an ongoing process. This step involves reassessing the space and its use over time to make long-term improvements. Removing physical barriers, adding a ground-floor use to a building's blank wall, or building programming or storage structures may be needed. It also involves adapting the management plan to changing circumstances and ensuring that the space's vision matches community goals.

Interestingly enough, another very similar approach is Transformative Placemaking which acts

Research Findings+

as more of an extension of this traditional Placemaking concept. The Bass Center for Transformative Placemaking defines this concept as an integrative process for creating connected, vibrant, and inclusive communities that benefit society and the economy.[60]

It goes beyond traditional placemaking by having a broader scope, a larger geographic scale, and an integrated approach that "breaks down the siloes between economic development, community development, transportation, healthcare, and other fields to advance local growth and development through a set of holistic, interconnected strategies."

This approach is also based on the idea that communities are shaped by the spaces in which they live, and that the creation of livable and sustainable communities requires a focus on the unique needs and aspirations of each community.

The Bass Center for Transformative Placemaking created a four-step framework to help shape and create these communities and environments.[61]

- *"Nurture an economic ecosystem that is regionally connected, innovative, and rooted in the assets of its local residents and businesses."*

A thriving economic environment is crucial for creating wealth for families and maintaining the necessary tax and income base for local governments to function properly. However, in many towns and communities, local assets remain largely underutilized or even unrecognized. Instead of trying to solve these economic problems through only physical solutions, Transformative Placemaking understands that it needs to instead create environments that are rooted in the strengths and resources of the people and businesses in the area.

- *"Support a built environment that is accessible, flexible, and advances community health and resiliency."*

A vibrant economic and social environment depends on a built environment that is functional and well taken care of. Unfortunately, most areas have been built around cars which makes things like walking, biking, and public transit very difficult, inefficient, or sometimes even impossible.

Transformative Placemaking aims to alleviate these issues by encouraging connectivity, promoting engagement within the community, and ensuring the built environment can accommodate a variety of uses and adapt over time.

- *"Foster a vibrant, cohesive social environment that is reflective of community history and identity."*

Creating a vibrant and cohesive social atmosphere requires both economic vitality as well as physical spaces that are engaging and inclusive to all members of the community. Public spaces such as walkable streets, concerts, street fairs, and other community-led events are important as they provide various opportunities for social interaction between different groups of people.

However, as addressed in the contextual design section, building a new development can fail if the identity and cultural heritage of the target community is not considered. Transformative Placemaking recognizes this aspect and, in turn, aims to promote inclusivity and equity as key elements in its practices.

- *"Encourage civic structures that are locally organized, inclusive, and support network building."*

Civic infrastructure is vital to a healthy community, as it enables people to connect, address concerns, and solve community-wide problems. However, in the past, governance structures that were necessary to implement a shared community vision have often been neglected in previous efforts of place-based economic revitalization.

Thesis Question+

How can architecture help to revitalize the dying, small town of Cairo, Illinois?

Figure 13

Research Summary+

The first section examines the reasons behind the decline of rural America over the past century or so. The main culprit was the population loss caused by the migration from small, rural communities to larger, more developed cities. This movement was largely due to the increased variety of opportunities in these larger cities. Other considerable causes were the overdependency and subsequent loss of a significant industry, degrading infrastructure, and the general shift to more efficient shopping and travel methods.

The following section aims to understand the stigma around designing in small towns and dissect the reasons behind it. What was found to the main issues were gentrification, displacement, loss of cultural heritage, and the potential disparities caused by unthoughtful design. This section also examined the 'Harbor Shores' development, which seems to be a real-life example of this stigma as well as a source of recent controversy and local resistance.

The third section introduced the concept of small-town revitalization. Through the lens of previous revitalization efforts, we examined four essential categories of how to approach revitalizing downtown areas of small, rural communities. These four aspects, when put together, can be a helpful guide in the revival of downtown Cairo.

Contextual design was the focus of the next section. In this section contextualism and its three main characteristics were defined. This helped explain how to effectively design without creating the harmful, stigmatized consequences that were previously outlined. It is critical that the design carefully balances innovation with the preservation of the local community, culture, and economy.

Section five introduces and explains the mixed-use typology and the three primary ways it can be configured. This development should aim for an integrative solution that utilizes all three configurations of mixed-use layouts. Vertical mixed-use brings the benefits that come with density. Horizontal mixed-use is great as it adds flexibility and lowers costs, and helps break up the large form. Additionally, expanding the mixed-use aspects to a larger scale helps create a vibrant and walkable neighborhood, and also helps soften the edges around the development. This allows the development to be more inclusive and open to the rest of the community. Also examined were the various benefits a mixed-use development can bring to a community.

The sixth section introduces the focus of sustainability which was another key focus of the theoretical premise. The section outlined the fundamental principles behind sustainable design, LEED certifications, and various benefits and practices. Additionally, the section also dived into a great leading example of a small town, like Cairo, that successfully integrated sustainability into its community and way of life.

The last few sections examined the various frameworks that currently exist to help communities approach revitalization. The frameworks that were explored were New Urbanism, Sustainable Urbanism, EPA Smart Growth Program, Main Street Approach, Placemaking and Transformative Placemaking.

Between all of the frameworks as well as the other sections, there were countless strategies and considerations that could be applied within Cairo. Going forward, a few effective strategies and considerations that are especially helpful and relevant to the design portion of this thesis include:

- Focus on, and specifically design for the local community and context.
- Balance innovation with both preservation and contextualism.
- Promote a vibrant, walkable, and inclusive atmostphere.
- Encourage economic stability, diversification, and growth.
- Utilize sustainable principles, building design, materials, and elements, etc.

case studies

1. Moorhead Masterplan

Large-Scale Context, *Mixed-Use Development, Urban Revitalization*

2. Greensburg Revitalization

Small-Scale Context, *Mixed-Use Development, Urban Revitalization, Sustainability*

Thesis Question+

How can architecture help to revitalize the dying, small town of Cairo, Illinois?

Figure 14

Moorhead Masterplan+

Typology: Masterplan, Mixed-use, Revitalization

Architects: Roers, Stantec, JLG Architects

Location: Downtown Moorhead, Minnesota

Status: Unbuilt, Planned, Early Development

Year: Masterplan developed in 2020

Overview+

The Downtown Moorhead Master Plan outlines a comprehensive vision for revitalizing the downtown area of the city. It was created to address the area's various social and economic challenges over the past several decades. The plan was developed through extensive public engagement which helped inform the design. Its vision aims to create a more livable, walkable, and sustainable urban environment for the residents of Moorhead.

The masterplan is split into 3 '*character districts*':

- The '*Moorhead Center*' district aims to be the economic heart of the downtown. In order to create a lively urban center, this area will maximize job, residential, and retail opportunities. Walking, biking, and socializing will also be encouraged via 'exciting placemaking'.
- The '*Downtown Mixed Use*' district will consist of several of development types, such as single and multi-level buildings, each with a varying number of uses. The goal of this district is to be walkable, inviting and serve most daily needs.
- The '*Creative Pioneers*' will be more of an industrial district that embodies the city's innovation, entrepreneurialism, and creativity.

Goals+

The plan is guided by five core goals to help define the development: *Authentic, Vibrant, Equitable & Inclusive, Resilient, and Connected*.

- *Authentic:* This goal aims to celebrate the history and future of the town by integrating new and historic businesses and buildings, as well as creating a lively streetscape filled with public art and entertainment venues. Another key part of this goal is to create a flexible, public square that can adapt to the growing needs and help this district act as the heart and economic hub of the community.
- *Vibrant:* This goal aims to create a vibrant downtown destination by concentrating new developments such as housing, offices, civic and cultural facilities, and educational institutions in the heart of downtown. Besides density, the plan aims to showcase the unique personality of each downtown district, and enhance Center Avenue as a central focus of the area.
- *Equitable & Inclusive:* This goal prioritizes creating a mixed-income community that is accessible, supportive, and welcoming to everyone. To achieve this, various options are emphasized, such as affordable housing, workforce training programs, engaging public art, and community organizations that serve the needs of the community.
- *Resilient:* This goal prioritizes the creation of a community that is environmentally sustainable and adaptable to future changes. This is done through the creation of various parks, green spaces, vegetation, and eco-friendly buildings, infrastructure, and services. This not only promotes walkability, but also helps ensure that the development is both resilient and meaningful to the local community.
- *Connected:* This goal also highlights the need for and promotion of a walkable, accessible, and connected community. The plan promotes an overall better connection to the river, future-proof transit policies, shared parking strategies, and an interconnected network of 'complete streets' that safely integrate pedestrians, bikes, public transit, and cars to make it easier for users to get around.

Figure 15

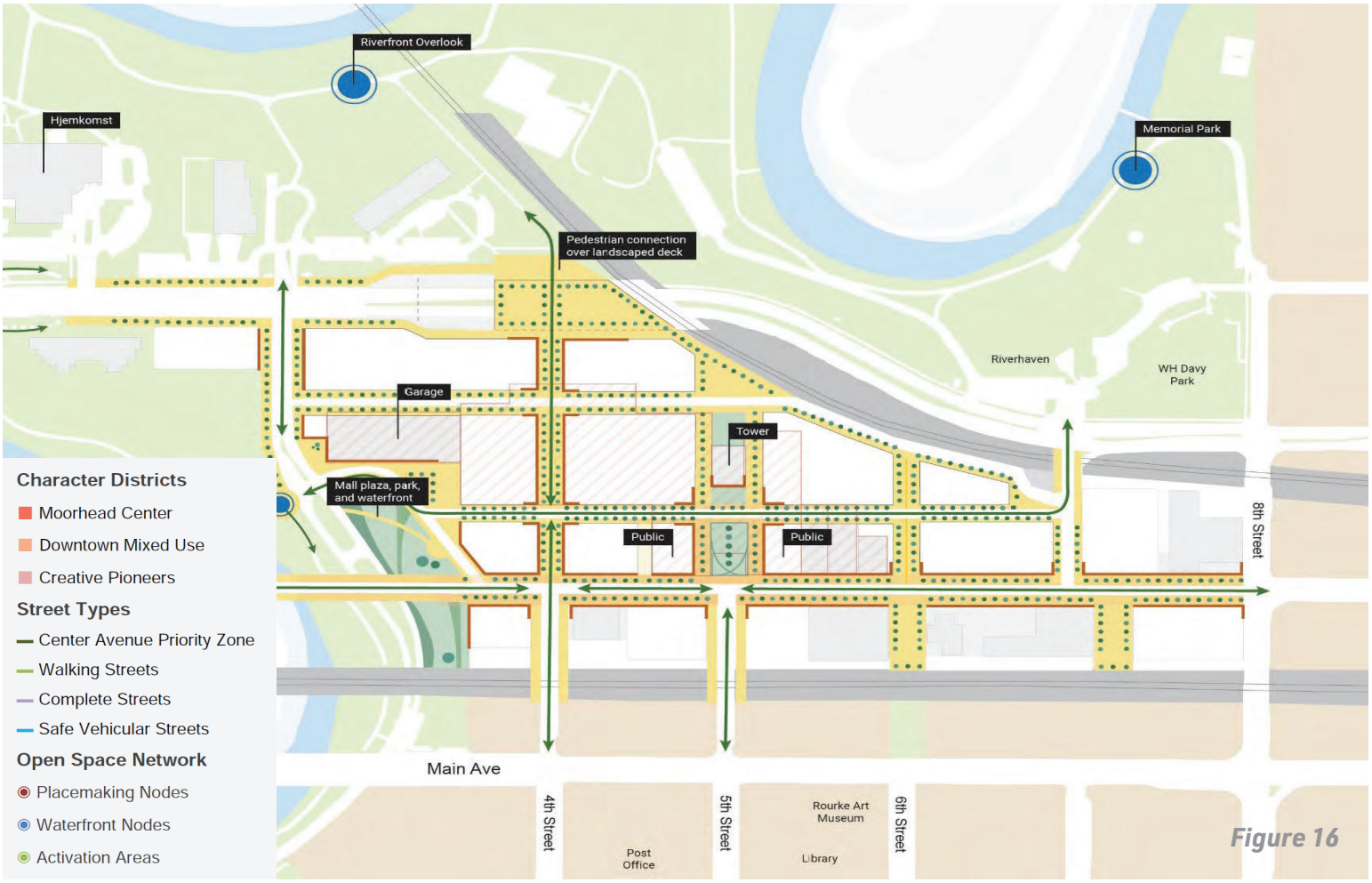


Figure 16

Figure 17

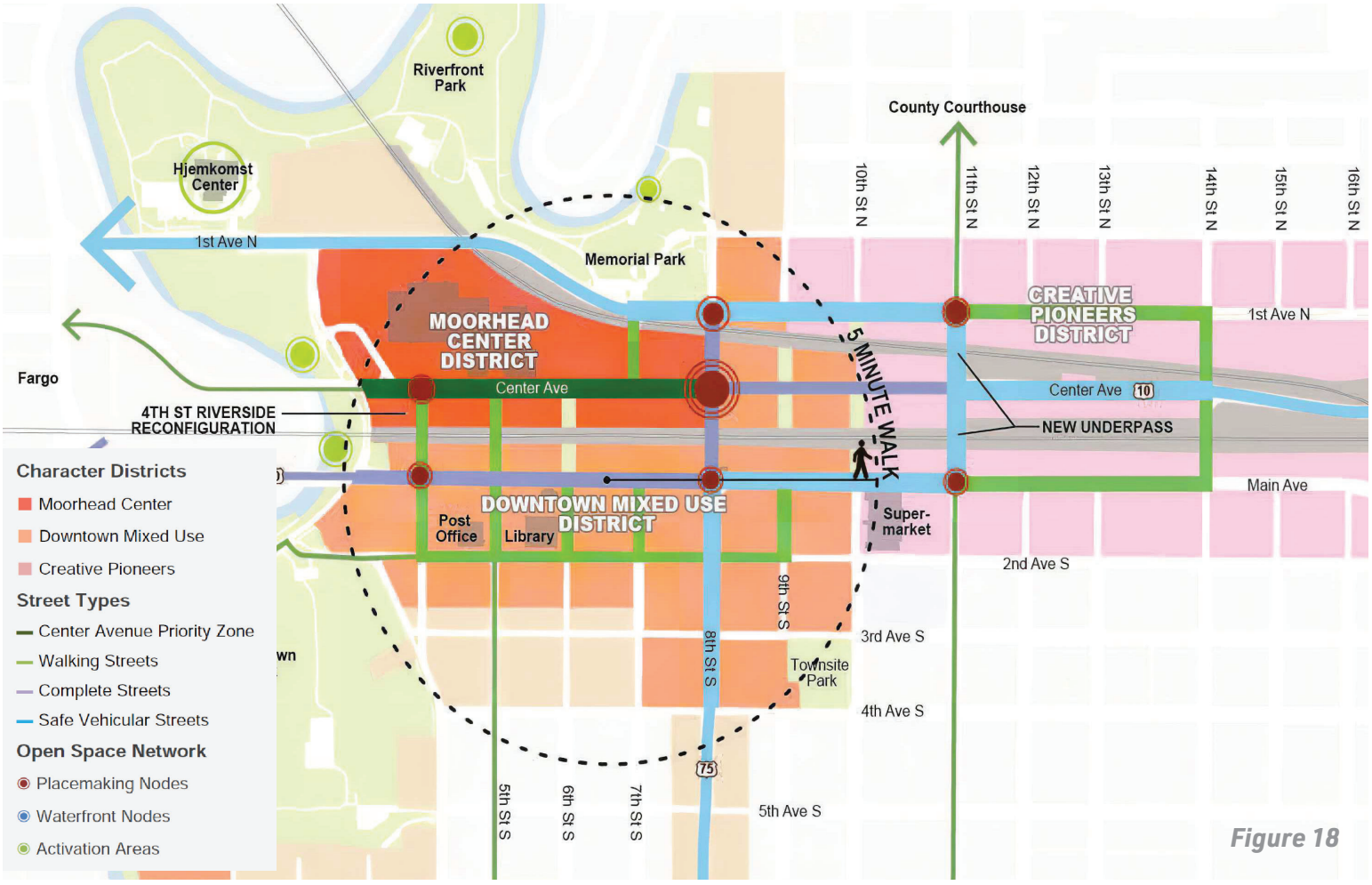


Figure 18

Figure 19

Strategies + Guidelines+

The plan outlined specific guidelines for each of the three districts. The guidelines were split between the public and the private realms, to help holistically define the character of the district and overall development. For the public realm, strategies encompassed streetscapes and civic spaces. Some of these strategies and guidelines include:

Streetscapes:

- Prioritize walking and biking, even if focused around major vehicular streets.
- Sidewalks should be a minimum of 6 ft. wide to promote inclusiveness and accessibility.
- Sidewalks should be separated from vehicular travel lanes.
- High-quality street furnishings such as trees, vegetation, proper lighting, benches, bike racks, waste bins, etc., are recommended for creating a comfortable pedestrian experience.

Civic spaces:

- The design should encourage visitors to stay year-round through lively civic spaces and activities.
- Shade trees are a must in parks and plazas.
- Small, pocket-sized parks and public areas are recommended throughout each district.
- Service and activity-related gaps within civic spaces should be filled with playgrounds, workout areas, splash pads, food courts, food trucks, etc.

For the more private side, the focus was on site layout and frontages, architectural design, and parking design. Some notable guidelines include:

Site Layout and Frontages:

- Prioritize zero setbacks, especially along main streets and public spaces with high activity.
- Primary frontages should support a continuous walking environment, while loading and parking should be focused on non-primary frontages.
- Ground floors should prioritize retail or other uses that stimulate the pedestrian experience.
- If a retail or other uses are not viable, housing along streets should include units with direct front door access to the street.
- Even though single-story buildings are welcome, denser, multiple-story housing and offices should be encouraged, especially along the larger, more active streets.

Architectural Design:

- All common entrances should be covered to help users as if they were already inside.
- Building design should consider and connect to the unique character and function of the area.
- The ground level should be filled with large windows to establish a connection between the interior and exterior spaces.
- Large facades should have textured materials to give users a comfortable sense of scale.
- Ground-level walls of more than 25 ft. should not be blank, instead, they should be covered with vegetation or unique architectural or artistic elements.
- To showcase the creative character of the area, bright colors and a mix of architectural styles should be used within the district's design.

Parking Design and Location:

- Surface parking should be minimized and hidden from public view.
- Curb cuts across sidewalks should be minimized.
- Reduce the need for expensive parking structures by utilizing cost-effective strategies like shared parking spaces.
- Emphasize the creation of street parking on major streets to help eliminate the uninviting, suburban, drive-though atmosphere that can harm the liveliness of the downtown.

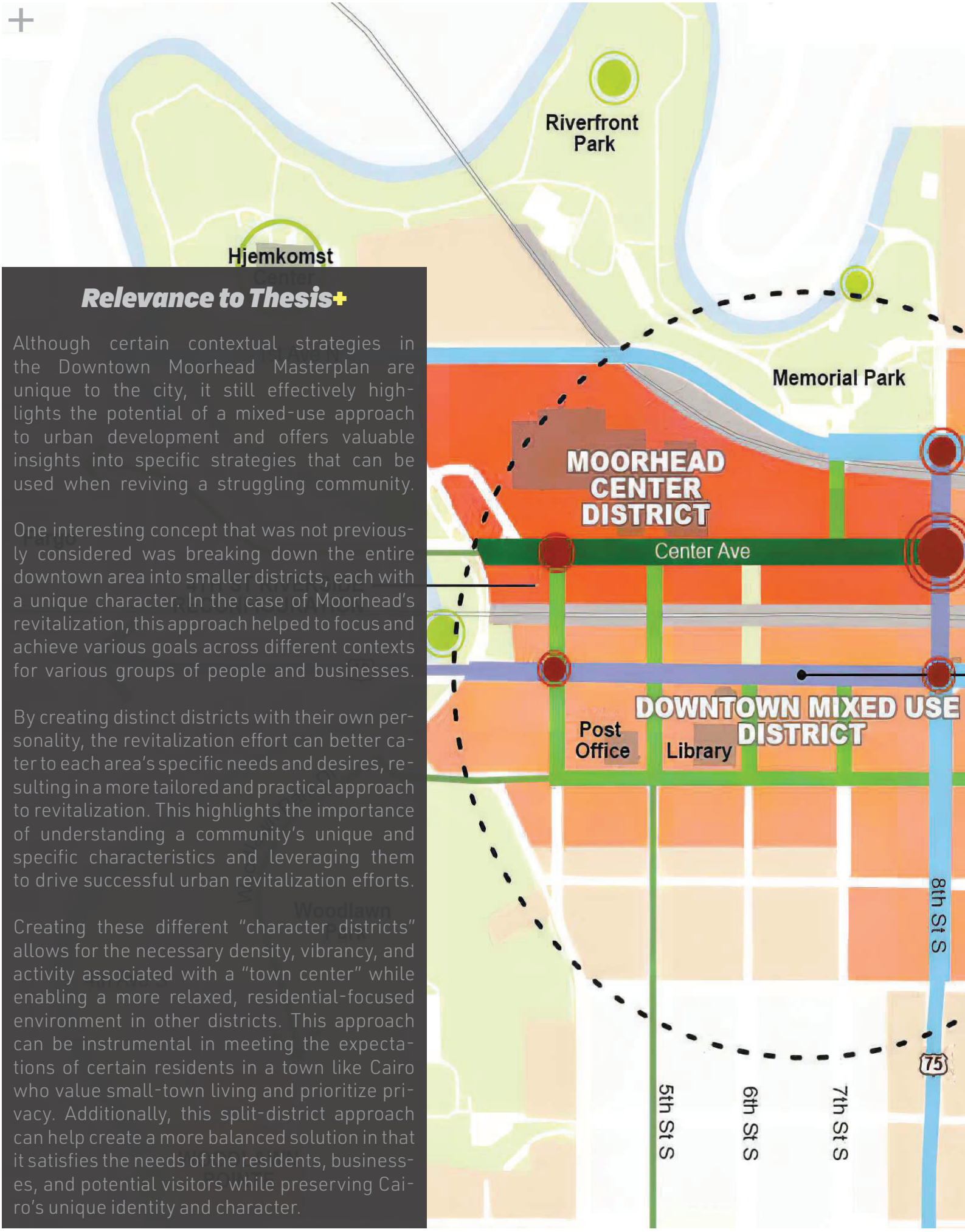
Relevance to Thesis+

Although certain contextual strategies in the Downtown Moorhead Masterplan are unique to the city, it still effectively highlights the potential of a mixed-use approach to urban development and offers valuable insights into specific strategies that can be used when reviving a struggling community.

One interesting concept that was not previously considered was breaking down the entire downtown area into smaller districts, each with a unique character. In the case of Moorhead's revitalization, this approach helped to focus and achieve various goals across different contexts for various groups of people and businesses.

By creating distinct districts with their own personality, the revitalization effort can better cater to each area's specific needs and desires, resulting in a more tailored and practical approach to revitalization. This highlights the importance of understanding a community's unique and specific characteristics and leveraging them to drive successful urban revitalization efforts.

Creating these different "character districts" allows for the necessary density, vibrancy, and activity associated with a "town center" while enabling a more relaxed, residential-focused environment in other districts. This approach can be instrumental in meeting the expectations of certain residents in a town like Cairo who value small-town living and prioritize privacy. Additionally, this split-district approach can help create a more balanced solution in that it satisfies the needs of the residents, businesses, and potential visitors while preserving Cairo's unique identity and character.



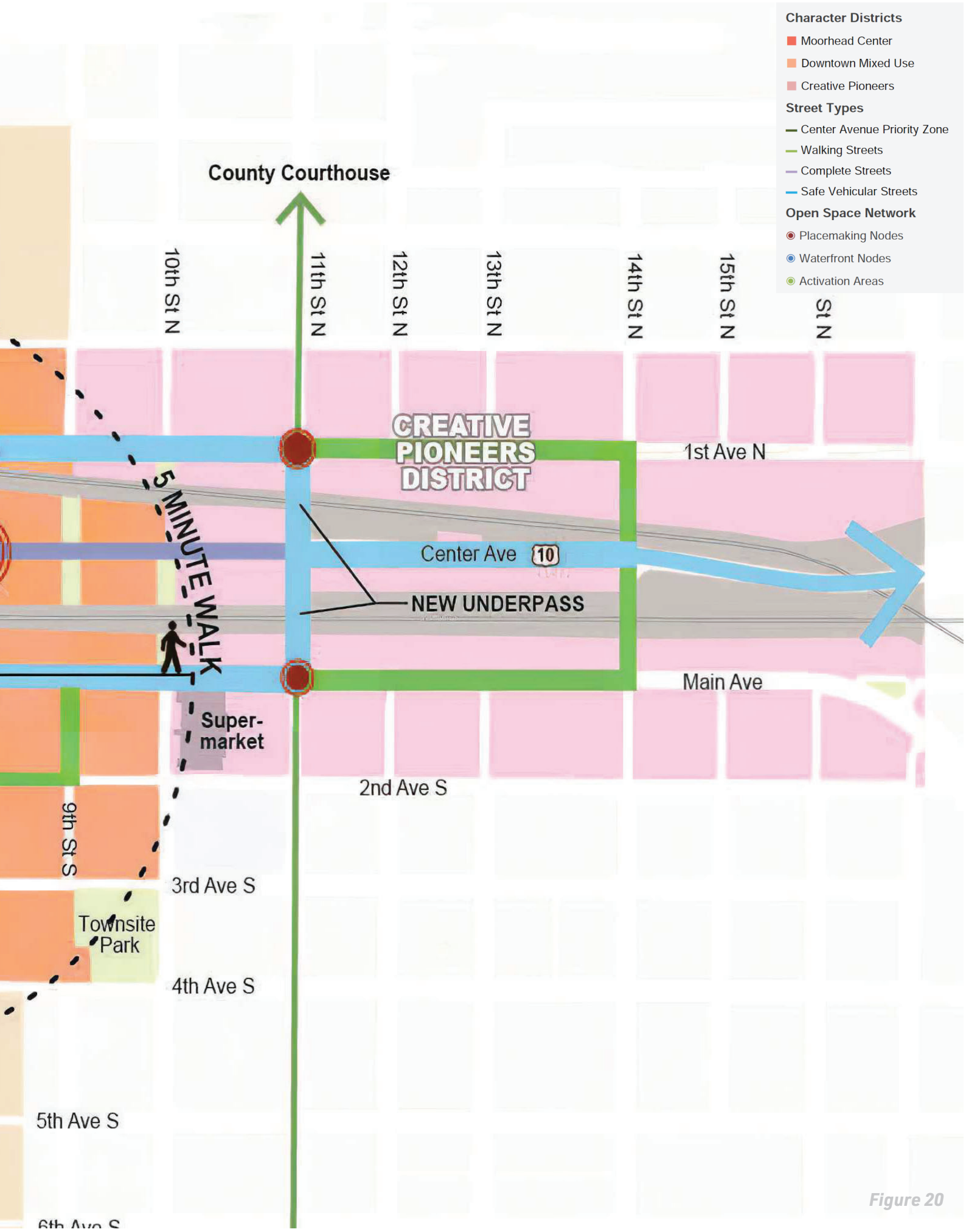

Character Districts
Moorhead Center
Downtown Mixed Use
Creative Pioneers
Street Types
Center Avenue Priority Zone
Walking Streets
Complete Streets
Safe Vehicular Streets
Open Space Network
Placemaking Nodes
Waterfront Nodes
Activation Areas
County Courthouse
10th St N
11th St N
12th St N
13th St N
14th St N
15th St N
St N
CREATIVE PIONEERS DISTRICT
1st Ave N
5 MINUTE WALK
Center Ave
10
NEW UNDERPASS
Main Ave
Super-market
2nd Ave S
9th St S
3rd Ave S
Townsite Park
4th Ave S
5th Ave S
6th Ave S

Figure 20

Thesis Question+

How can architecture help to revitalize the dying, small town of Cairo, Illinois?

Figure 21

Revitalization of Greensburg+

Typology: Masterplan, Mixed-use, Revitalization

Architects: BNIM Architects

Location: Greensburg, Kansas

Status: Developed + Ongoing

Year: Masterplan developed in 2007

Overview+

As discussed in the research section, the revitalization of Greensburg came in response to the devastating EF-5 tornado that leveled the area on May 4th, 2007. This presented a major challenge for a small community of only 1,500 people. However, instead of just rebuilding, the community decided to create a model town that focused on sustainability to lead to long-term growth, resiliency, and improved quality of life for residents. This was achieved through the creation of a comprehensive plan that incorporated a range of community-led goals, guidlines, and strategies.Through thoughtful architecture and urban planning, the result was a community that could generate economic growth, withstand future environmental disasters, and serve as a model for other towns facing similar challenges.

Goals+

The Greensburg Master plan is one of the comprehensive guides that were developed. As also discussed previously in the research section, the community outlined eight goals for revitalization:

- *Be progressive while remaining unassuming:* This goal seeks to emphasize and promote innovation and new ideas while still respecting the traditional values and small-town way of life. The implementation of new sustainable practices and technology, for example, should be done in a way to not upset or run over the towns unique character and history.
- *Open doors to newcomers while maintaining traditional cultural heritage:* This goal aims to invite outside visitors while also ensure the promotion of the local community. Things like celebrating local art, preserving historic buildings, and promoting local cultural events are some ways this could be done.
- *Provide opportunities for young people–education, jobs, a future back home*: Access to quality education and job opportunities would help to ensure the younger population wouldn't have to leave their home in Greensburg or Kiowa county to find opportunities elsewhere. Instead, this goal aims to create a place they would want to return home to.
- *Value the natural environment, balanced with growth and economic development:* This emphasizes the generation of economic growth while remaining environmentally responsible. This would include the promotion of sustainable design and building practices, preserving natural resources, and reducing the overall carbon footprint of the town.
- *Build a variety of durable, healthy, energy-efficient houses and buildings:* This goal aims to create a meaningful variety of affordable, energy-efficent, and environmentally sustainable housing and business options.
- *Look to renewable sources of energy, such as Greensburg's plentiful wind:* Taking advantage of renewable energy sources such as wind and solar would help reduce dependence on fossil fuels and promote sustainability.
- *Treat each drop of water as a precious resource:* The revitalization effort should promote responsible use of water resources through various conservation practices and technologies.
- Remain affordable: Creating affordable housing, jobs, and assisting entrepreneurship, ensures that Greensburg stays affordable and accessible for all residents and businesses.

City Hall+

- LEED Platinum.
- Includes council Chamber, community center, city offices, etc.
- Sustainable features: green roof, geothermal HVAC, solar panels, rainwater harvesting, and energy-efficient lighting.
- Sustainable materials: bamboo flooring, reclaimed wood, and recycled steel.

Figure 22

Kiowa Public Schools+

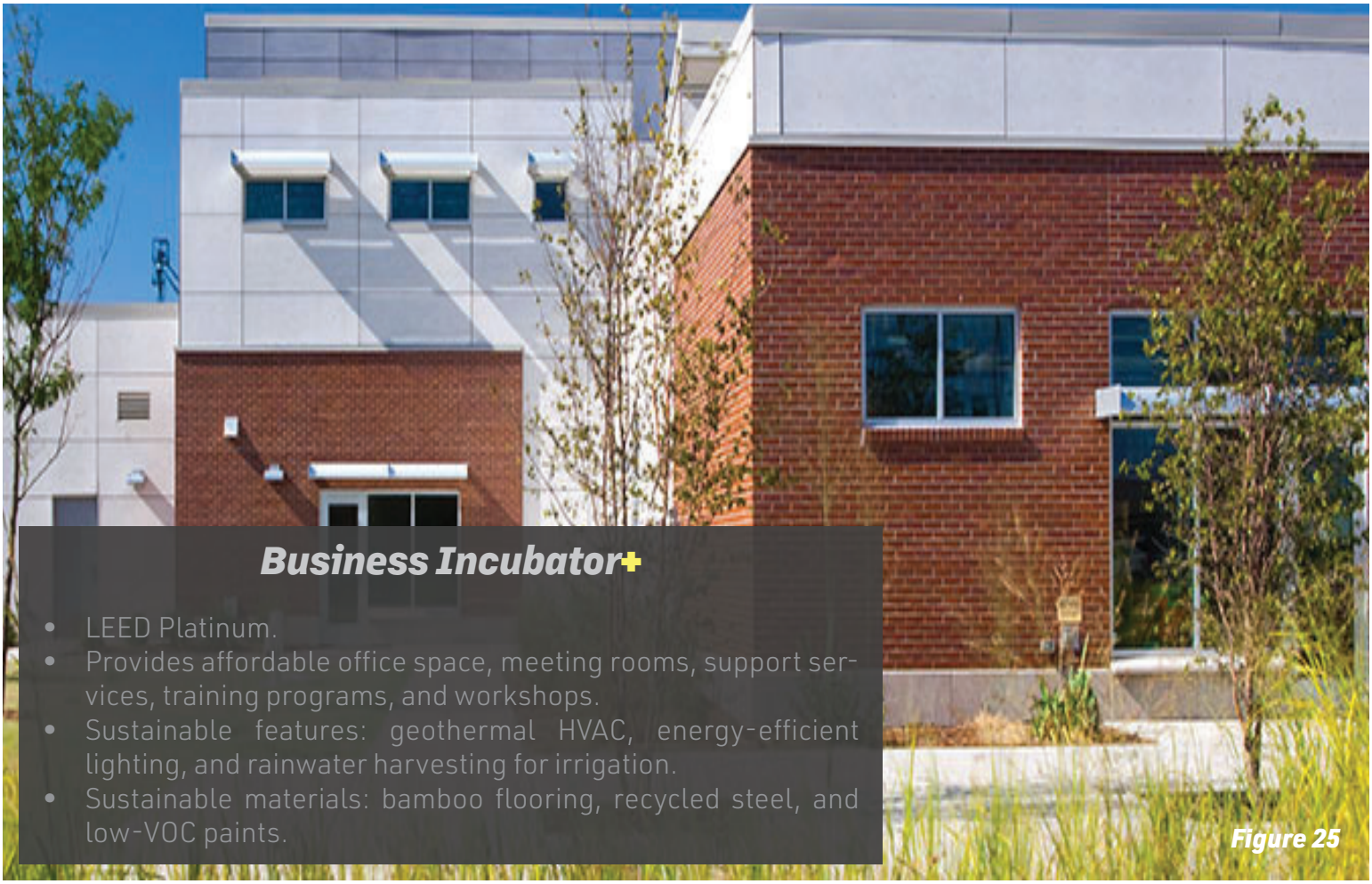
- LEED Platinum.
- Facilities include Pre-K, Kindergarten, Elementary School, Middle School, and High School.
- Sustainable features: geothermal HVAC, energy-efficient lighting, and passive daylighting strategies.
- Sustainable materials: recycled content carpet, low-VOC paints, and recycled steel.

Figure 23

5.4.7 Arts Center+

- LEED Platinum.
- Commemorates the date of the 2007 tornado.
- Sustainable features: low-flow plumbing, geothermal HVAC, and energy-efficient lighting.
- Sustainable materials: bamboo flooring, reclaimed wood, and recycled steel.

Figure 24



Business Incubator+

- LEED Platinum.
- Provides affordable office space, meeting rooms, support services, training programs, and workshops.
- Sustainable features: geothermal HVAC, energy-efficient lighting, and rainwater harvesting for irrigation.
- Sustainable materials: bamboo flooring, recycled steel, and low-VOC paints.

Figure 25

Figure 26

Figure 27

Revitalization of Greensburg+

Strategies + Guidelines+

The Long-Term Community Recovery Plan (LTCR) for Greensburg provided a framework for implementing these goals through several specific strategies and projects that each address four key areas of the community. These areas were: *Sustainable (Green) Development, Housing, Economy and Business, and Community Facilities and Infrastructure.*

Sustainable (Green) Development:

- Establish a local resource center to provide information and resources regarding sustainability.
- Design all public buildings and facilities to the highest standard of sustainability. (LEED)
- Identify, evaluate, and utilize alternative energy sources such as solar or wind within both public and private sectors.
- Establish a green certification program for privately owned buildings and homes.
- Promote water conservation and efficency through water efficient technologies and practices such as rainwater harvesting systems or low-flow toilets and faucets.
- Promote the use of sustainable design through the construction of energy-efficient homes, financial incentives, educational programs, and local recognition.
- Develop both sustainable land use and transportation plans that promote mixed-use development, walking and biking, a town center, and transit-oriented development.

Housing:

- Create a range of housing options and programs that include affordable and low-income housing, workforce housing for young familes and professionals, and senior housing.
- Encourage the use of local materials and labor to help support local businesses, reduce transportation-related emissions, and in general, stimulate the local economy.
- Create vibrant and walkable neighborhoods by encouraging denser, mixed-use developments.
- Encourage innovative design and construction techniques such as using recycled materials and designing resilient buildings to withstand severe weather events like a tornado.

Economy and Business:

- Promote and assist the development of local businesses and entrepreneurship through the creation of a business incubator and various other community programs and initiatives.
- Focus on key sectors identified by the community to generate economic development, such as renewable energy and agriculture.
- Promote tourism as another key economic driver, highlighting Greensburg's unique history and culture, and its sustainable practices and initiatives.

Community Facilities and Infrastructure:

- Creating infrastructure that is sustainable and resilient, through efforts such as green stormwater management practices as well as permeable materials.
- Promote efficient transportation through ways such as walking, biking, bike racks, and car and bike-sharing programs.
- Develop public spaces that are green and inviting, such as parks and other recreational areas, to help attract visitors and improve the overall quality of life.
- Implement sustainable technology, such as installing energy-efficient streetlights.

Overall, Greensburg's focus on its "green" revival seems to be paying off. The town has seen considerable cost-savings, lower carbon footprint, more resilient buildings and infrastructure, a strong community identity, and in general, a more vibrant, secure, and prosperous place to live.

Figure 28

Figure 29

Figure 30

Figure 31

Relevance to Thesis+

The case study of Greensburg offers many valuable insights and strategies that are quite relevant to the proposed revitalization of downtown Cairo. I believe one of the most important takeaways is the viability and potential of using sustainable design to transform and revitalize small-town communities. This is particularly relevant to this thesis as both Greensburg and Cairo have similar total populations. This similarity makes the lessons and strategies especially applicable to Cairo's revitalization.

The case study highlights the social, economic, and environmental benefits of taking a risk with a large-scale solution rather than a smaller, more fragmented approach. It demonstrates that while focusing on sustainability may come with some initial financial risks, such as high upfront costs, the long-term social, economic, and environmental benefits can outweigh these costs and lead to a more prosperous and thriving community.

Another relevant aspect of the Greensburg case study is the importance of community identity and its role in the success of sustainable design initiatives. Greensburg's "green" approach helped to create a strong sense of community and pride among residents, which will help to sustain the revitalization over time. Like in the Moorhead case study, the general emphasis on community engagement in the design and planning process is also important.

Creating a vibrant, mixed-use town center that is walkable, connected, and includes inviting public spaces, helps to encourage social interaction, as well as deepening the overall sense of community identity and belonging.

Overall, Greensburg serves as an excellent model for how struggling small towns like Cairo, can embrace innovation and use sustainable design help revitalize their community.

Figure 32

thesis context

The Historical context of Cairo, Illinois

Thesis Question+

How can architecture help to revitalize the dying, small town of Cairo, Illinois?

Figure 33

Historical Context

Early Days

The city of Cairo, Illinois, has quite a rich history. The peninsula where the city currently lies was first visited by the French explorer and priest, Father Louis Hennepin, in 1660. It was settled roughly four decades later in 1702 by Charles Juchereau de St. Denys, another French explorer, along with 30 men, who helped establish a fort and tannery near the confluence of the Mississippi and Ohio rivers. However, the following year, the fort was attacked by the Cherokee Indians. Most of the men were killed, effectively leading to the end of the fort and tannery.

In 1803, Lewis and Clark arrived at the same peninsula. They conducted a geographical survey of the confluence and surrounding area and met with the chiefs of the local Indian tribes. In 1818, Baltimore resident John G. Comegys attempted to establish Cairo and the Cairo bank through a charter from the territorial government. With assistance from Shadrach Bond, the first governor of Illinois, Comegys purchased 1,800 acres around the confluence and named it after the Egyptian city. These two men were set on making Cairo one of the greatest cities in America. Unfortunately, Comegys died in 1820, and the plan failed. However, the name Cairo and the general nickname "Little Egypt" became a widespread marker of southern Illinois.

In 1837, The Cairo City and Canal Company was established by the Illinois State Legislature. Hearing news of the future arrival of the Central Illinois Railroad led to the construction of levees, a dry dock, a shipyard, sawmills, an ironworks, a hotel, a warehouse, and residential cottages. This also brought many people to the area. Cairo was advertised in England through a London firm of 'John Wright & Company.' However, the firm's failure in 1840 led to a significant decrease in population, dropping to less than 200 in less than two years.

After a period of stagnation, Cairo's development resumed in 1853 when the construction of the railroad neared completion. In 1856, construction was completed and connected Cairo to Galena, Illinois. A few years later, its population surpassed 2,000 residents. Many people believed that Cairo would surpass metropolises such as St. Louis, Louisville, and Cincinnati, and even thought the town should become the nation's capital due to its geographical significance. Cairo became an essential steamboat port, shipping significant amounts of cotton, wool, molasses, and sugar south to New Orleans. Additionally, before the start of the Civil War, Cairo became home to a significant transfer station for the Underground Railroad. Many of the African Americans who escaped slavery used the river to ride north to Cairo before then hopping on the railroad lines to Chicago.

Civil War

When the Civil War began in 1861, Cairo became an essential base for the Union army, headed by General Ulysses S. Grant and Admiral Andrew Foote. Cairo's geographical location at the confluence of both rivers brought a significant advantage in quickly receiving supplies and soldiers. The Confederate army realized the strategic importance of this confluence and thought it necessary to take it over. However, nearly 3,000 men and various artillery were immediately sent to Cairo, and an additional 38,000 men were also stationed within a day's reach. More artillery was later sent to the base, and 15-foot-high levee walls were built around the city, which made it very difficult to attack. At the southernmost tip of the peninsula, Fort Prentiss was built. Initially named after an honorable Union officer, it was later renamed to Camp Defiance once General Ulysses S. Grant arrived.

Cairo quickly transformed into a massive military camp. The city's fortified nature attracted attention from across the country, where it was referred to as "the Gibraltar of the West." Despite this, soldiers stationed in Cairo found it challenging to live there as the area was muddy, flood-prone, and infested with rats and mosquitos. Local businesses

Thesis Question+

How can architecture help to revitalize the dying, small town of Cairo, Illinois?

Figure 34

Historical Context

often cheated and robbed the soldiers, and one soldier described the conditions as worse than "hog pens."

During the war, Cairo saw the creation of multiple saloons, brothels, stables, a drug store, a theater, a gun shop, a blacksmith, a wheelwright shop, a post office, and a hospital. Although heavily fortified, there were no attacks; the city remained a training and supply base for thousands of Union soldiers. Instead, the war brought a significant influx of runaway slaves, known as "contrabands," to the city, where they lived in an army-established "Contraband Camp." After the war, Cairo became a staging area for the formerly enslaved people, with over 3,000 African Americans choosing to remain in the city. Unfortunately, this marked the start of a deep racial tension between the African American residents and the southern-influenced white residents.

A Thriving Town

Cairo's economy thrived due to the high river traffic, leading to the government designating it as a Port of Delivery and constructing a United States Customs House. Manufacturing industries and businesses also began to boom as they were attracted by the large labor pool and the city's convenient location. In 1890, the city had a population of over 6,000 people. Despite a drop in steamboat traffic, the use of more efficient barges caused the overall traffic on the Ohio River to increase dramatically. While most of this cargo was not delivered to Cairo, the still town thrived due to its exports of products from its lumber mills, furniture factories, and other businesses. The city also featured seven railroad lines.

In addition to its thriving river commerce, one of Cairo's major ferry businesses was transporting hundreds of thousands of railroad cars across the Mississippi and Ohio rivers. This was due to the lack of bridges crossing either river at that time. However, this changed in 1905 when a railroad bridge was built across the Mississippi river at Thebes, Illinois, about 25 miles to the north. This severely damaged Cairo's reputation as a railway hub, significantly lowering its river traffic and effectively eliminating its ferry services. While Cairo's population would reach its peak of 15,000 two years later, in 1907, the transition to the Thebes bridge and concerns of water seepage foreshadowed the slow yet drastic decline that was to come.

Dark Days Ahead

Besides a declining industrial economy, Cairo faced a different, more terrible monster that eventually played an even larger role in its demise. In November 1909, Cairo saw one of the most brutal lynchings in American history. Will "Froggy" James, an African-American man, was accused of the rape and murder of Annie Pelley, a white shop clerk. While James had not been convicted, James was kidnapped from the sheriff's custody and hanged in the town square (at the intersection of 8th street and Commercial Avenue). His body was later shot multiple times, dragged for a mile, torched, cut up for souvenirs, then attached his head to a pole to leave to burn. This gruesome act was followed by another lynching of a man named Henry Salzner, who had been charged with murdering his wife. The angry mob was out of control until the National Guard was called in to restore order. The following year a sheriff's deputy was killed while attempting to prevent another mob from lynching a black man who was accused of stealing a white woman's purse. Again, the National Guard was called to step in.

The lynching of James and Salzner in 1909 was a significant event in Cairo's history, demonstrating the deep-seated racism and lawlessness of the time. The mob's actions were an extreme response to perceived injustices, with both men executed without trial or conviction. The lynching highlighted the continuing social divisions in the town and was a prelude to the racial tension and violence that would occur in Cairo in the 1960s. Despite the terrible event, the town managed to restore some sense of order with the help of the National Guard,

Thesis Question+

How can architecture help to revitalize the dying, small town of Cairo, Illinois?

Figure 35

Historical Context+

although the incident left a lasting negative impact on Cairo's history.

When the Great Depression hit America, Cairo, in particular, suffered greatly. Over the next couple of decades, Cairo saw a drastic increase in crime and organized crime, with mobs illegally trafficking liquor, gambling machines, and causing various acts of violence. The city also had an extremely high murder and prostitution rate during this time.

Black teachers in Cairo sued the government in federal court in 1946 to demand equal compensation. Thurgood Marshall argued the case, and both the judge and the defense attorney frequently referred to him as a "child" throughout. Marshall gently informed the court that he was the illustrious lawyer who had handled a similar case in Tennessee. Marshall would later become the first African American justice to serve on the Supreme Court.

By 1960, Cairo's population had decreased to 9,000. The town's racial tensions worsened as black residents struggled to find employment in white-owned enterprises, as white workers from surrounding states were hired instead. In 1962, all of Cairo's civic facilities were segregated. The public pool was turned into a 'private club' for white residents only, in order to exclude the black community. A similar situation involving the Ku Klux Klan also happened at the local skating rink. A protest was later held at the pool but was stopped by a racist white resident who ran his truck into the crowd. To prevent integration, the pool was closed in 1963.

A few years later, a full-blown "war" broke out after the suspicious death of a black soldier in police custody was ruled a suicide, in which the black community rose up in protest. Violence with white-formed vigilante groups grew to the point where the National Guard was again called to step in. By the year of 1969, black citizens faced severe pay inequalities, job discrimination, and were not allowed to gather at parks or sports activities. If they did, they would receive threats from the local police and a white-formed vigilante group named the 'White Hats.' The same year, the black community created the 'United Front of Cairo' to fight the White Hats. The United Front demanded jobs from white-owned businesses but were refused, prompting a boycott of these businesses. Rather than hiring black employees, many businesses closed instead. Eventually, the White Hats were forced to disband due to state intervention. That same year, Cairo's mayor banned gatherings and marches of any kind. However, protestors continued to demonstrate. The federal court later declared it unconstitutional.

The extreme violence and protesting continued well into the 1970s, eventually leading most downtown businesses to close over the next decade. By this time, Cairo only had about 6,000 residents left, a number that continues to dwindle to this day.

Due to its location at the confluence of the Mississippi and Ohio rivers, Cairo has also been prone to flooding. The most devasting flood came in 1937 when the Ohio River crested nearly 60 feet. The flood of 1937 was the result of unprecedented January rain throughout the region. Fortunately, due to its low elevation, the city was the only town along the Ohio River that was completely surrounded by levees. This made Cairo the only community along the river that did not get flooded. Almost a century later, Cairo was again faced with a severe flood. The flood of 2011 caused major damage, such as sinkholes and significant water leaks into the city, which prompted the U.S. Army Corps of Engineers to intentionally breach a levee to protect upstream cities.

Today, Cairo has been reduced to an empty shell of its former self. Once a bustling city with rich history, its legacy has been marred by economic decline, violence, racial tension, and devastating floods. What remains are empty lots, crumbling buildings, and its 1,500 loyal residents that remain hopeful their city can live again.

site analysis

"Recognizing the need is the primary condition for design." – Charles Eames

Introduction+

Cairo + Region

WISCONSON

MADISON,
WISCONSON

MILWAUKEE,
WISCONSON

MICHIGAN

CHICAGO,
ILLINOIS

INDIANA

Illinois

OHIO

INDIANAPOLIS,
INDIANA

KANSAS CITY,
MISSOURI

CINCINNATI,
OHIO

ST. LOUIS,
MISSOURI

KANSAS

LOUISVILLE,
KENTUCKY

MISSOURI

KENTUCKY

Cairo

NASHVILLE,
TENNESSEE

TENNESSEE

MEMPHIS,
TENNASSEE

GEORGIA

ALABAMA

Regional Hardship+

Cairo is located at the southernmost tip of Illinois. It is the county seat of Alexander County and is part of the 'Southern Five Regional District'. This district is part of a larger geo-cultural region known as the Lower Mississippi Delta. This 'Delta' region is one of the poorest regions of the country.

Design Consideration

Cairo and the other surrounding counties in Illinois have faced severe economic hardship. The citizens of Cairo have done everything to save their town and to stay in it. So far, nothing has seemed to work. In order to revive this area, outside help is required. The final design needs to address the current needs of the community as well as act as a springboard for future investment, development, and prosperity for the region and its people.

Figure 36

Market Overview+

Population + Diversity+

As of the 2020, the U.S. Census reported that Cairo has a population of 1,733. Of its residents, the majority are either Black or African American, making up over 70 percent of the total population. Women slightly outnumber men in Cairo, with a little more than half of the total. In terms of age, many of the people residing in Cairo are slightly on the older side, with 46 years old being the median age and over 20 percent of the population being older than 65.

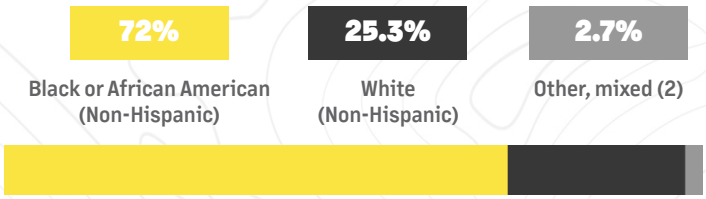


Figure 37

A residential mobility rate refers the number of people moving in or out of a specified area. The population of Cairo is relatively stable with a residential mobility rate of 0.3 percent. This is very low especially with the national residential mobility rate being around 9 percent. However, Cairo's low rate does not tell the whole story. A low residential mobility rate could mean that the area is experiencing gradual population decline, or the area has a higher number of older people who are less likely to move. Considering Cairo's prevalence of older residents, these are most likely significant contributing factors. In fact, Cairo's population has been in a steady decline for decades due to several economic, environmental, and social factors. When the town was at its peak around 1920, it had a population of over 15,000 people. With its current population, that's nearly a 90 percent loss.

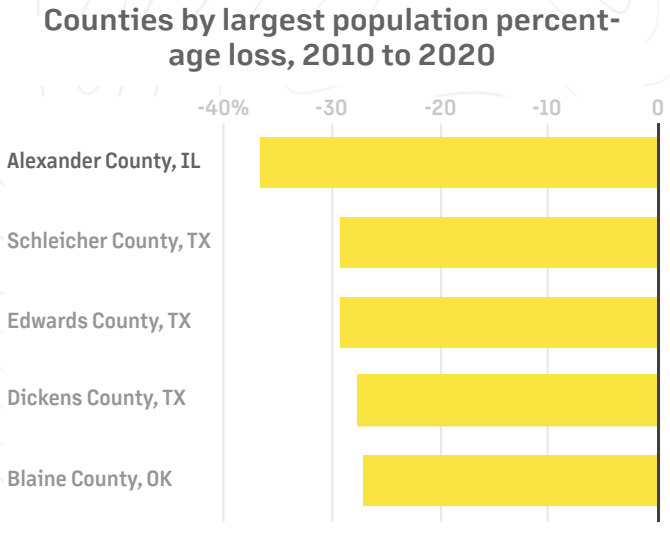


Figure 38

While the decline has slowed within Cairo itself, the same can not be said about Alexander county. In fact, Alexander county had the highest percentage loss of population from 2010 to 2020. Over 36 percent of its population had been lost between that time, with no other county within the U.S. losing more than 30 percent.

Additionally, nearly 20 percent of the population in Cairo have some sort of disability, with an ambulatory difficulty accounting for the largest percentage of the total. An ambulatory disability is a permanent disability to such a degree that the person cannot walk or has great difficulty doing so. Due to this, the design will have to employ ADA standards for Accessible Design to make the space functional and inviting for all users.

Housing + Families+

The town's current housing situation is concerning. The median property value within Cairo is $29,400. This number is staggeringly low compared to the state and national values. Low property values are quite common across many small U.S. towns. These low values can and often come with various negative effects on residents.

One significant effect is the increased difficulty for residents to sell their homes and move elsewhere. This is often true if the residents mortgage is more than the value of their home. This could possible lead to a feeling of being trapped within their community. Some other adverse effects include decreased access to credit or loans as lenders could see the low property values as too risky, or an increased difficulty to attract outside interest and investment, that often leads to a lack of growth and economic opportunities. Cairo has been hit with all of these effects, at least in some capacity.

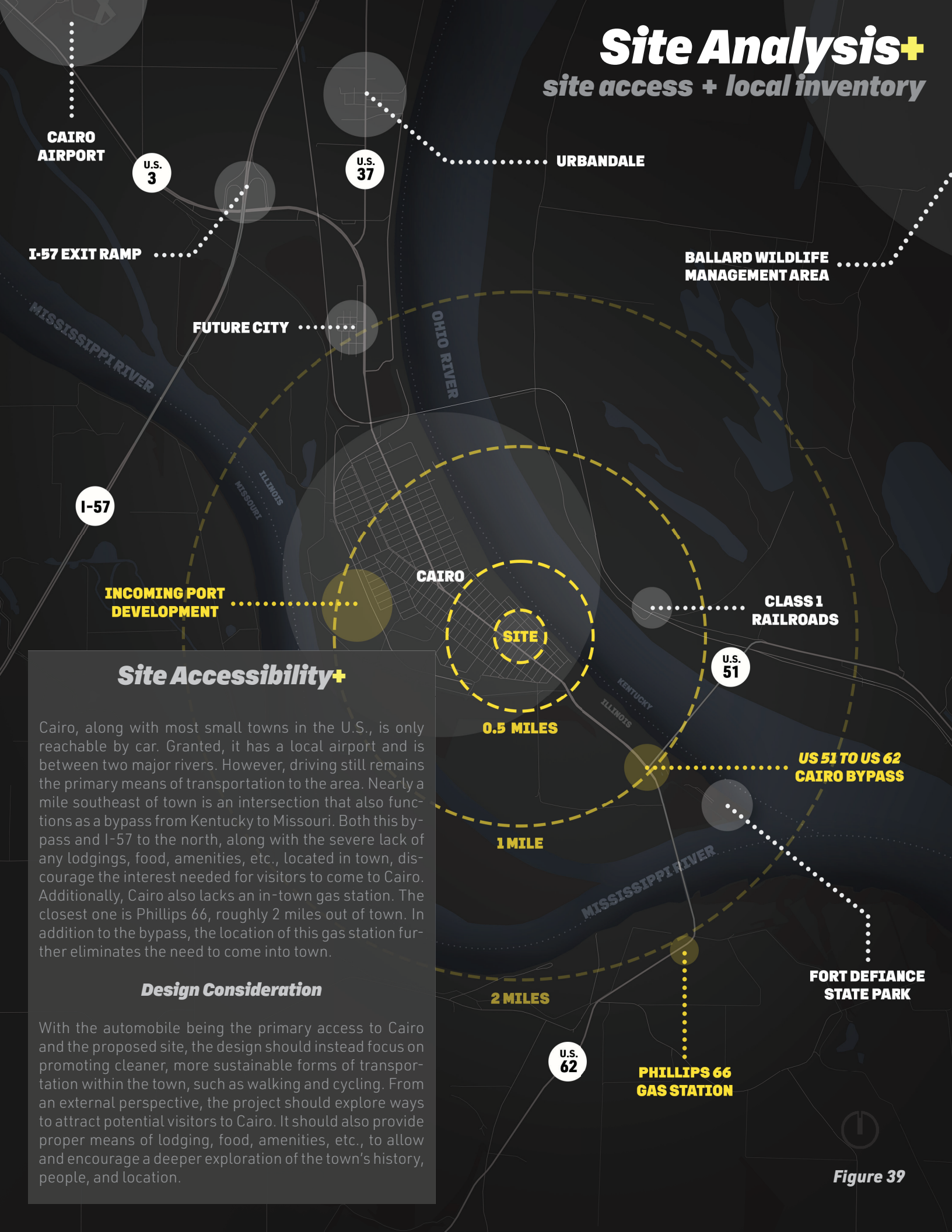
The median gross rent in Cairo is $450. This is significantly lower than median gross rent of Illinois which is over $1,100. The low rent prices compared to the state and even national median is most likely a major factor in why external interest in building new housing developments or businesses have previously been non-existant. This hesitancy is understandable. However, as will also be addressed later in this analysis, the port will more than likely have ground-breaking, long-term benefits for cairo and surrounding region.

The total number of housing units within the town is 1,036. with 213 of them being vacant. This high number of vacancies is telling of Cairo's decline over the years, as many of them are likely attributed to houses that have long since been abandoned.

There are a total of 580 households in Cairo, with most of

Site Analysis+

site access + local inventory



Site Accessibility+

Cairo, along with most small towns in the U.S., is only reachable by car. Granted, it has a local airport and is between two major rivers. However, driving still remains the primary means of transportation to the area. Nearly a mile southeast of town is an intersection that also functions as a bypass from Kentucky to Missouri. Both this bypass and I-57 to the north, along with the severe lack of any lodgings, food, amenities, etc., located in town, discourage the interest needed for visitors to come to Cairo. Additionally, Cairo also lacks an in-town gas station. The closest one is Phillips 66, roughly 2 miles out of town. In addition to the bypass, the location of this gas station further eliminates the need to come into town.

Design Consideration

With the automobile being the primary access to Cairo and the proposed site, the design should instead focus on promoting cleaner, more sustainable forms of transportation within the town, such as walking and cycling. From an external perspective, the project should explore ways to attract potential visitors to Cairo. It should also provide proper means of lodging, food, amenities, etc., to allow and encourage a deeper exploration of the town's history, people, and location.

Figure 39

Market Overview+

them consisting of 2.8 persons per household. The average family size in Cairo is 5.40 people, which is a couple more than the statewide average of 3.15. The type of households within Cairo are split in three ways: 1. Married-couple family household, 2. Male householder, no spouse present, family household, and 3. Female householder, no spouse present, family household, with the last type accounting for over half of the total number in Cairo. Children under 18 years account for 22 percent of the total population, and most of that percentage consists of kids between the ages of 5 and 14 years of age.

There is a 68.4 percent homeownership rate in Cairo, which is actually slightly higher than the state rate of 67.5 percent. Although public housing will be the main housing focus in this thesis, other options such as rent-to-own units could also be explored to help exisiting residents increase their stake and ownership levels of their town.

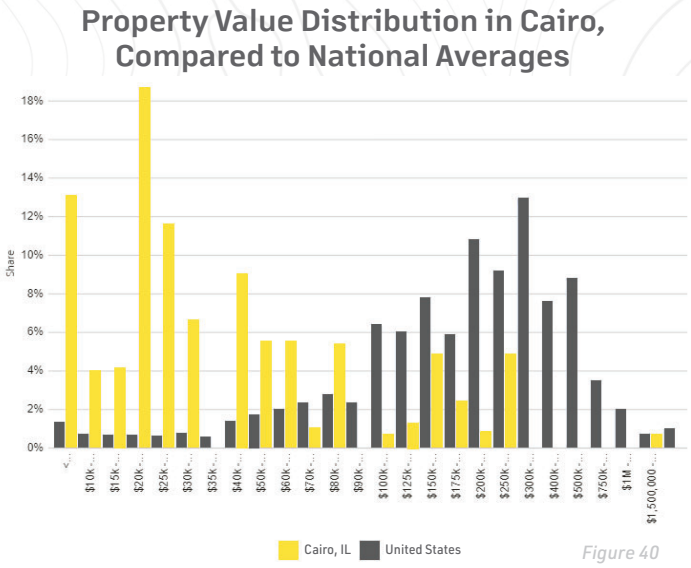


Figure 40

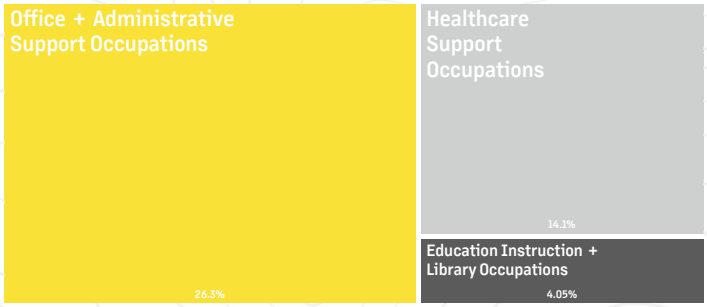


Figure 41

Instruction, & Library Occupations make up the most common job groups among Cairo residents. The average commuting time for Cairo residents to drive to work is currently around 25 minutes. Longer commuting times is one of several aspects that the design will aim to focus on and address.

Income + Poverty+

The median household income in Cairo is $29,375. This is well half of the state median income of $72,205. The city of Chicago contributes a large amount to this number. Chicago in general holds a great amount of economic dominance of Illinois and is could be seen as one of several factors holding back the southern portion of the state, including various small towns like Cairo.

Nearly 30 percent of all Cairo residents are live below the poverty line. This is more than double the rate of the state. The most common racial or ethnic group living in poverty within Cairo is Black or African American, followed by White and Hispanic. Additionally, over half of the kids under the age of 18 are living below this line. Another major issue in Cairo is the aspect of food security. Alexander County especially, has the highest percentage of food insecurity in the entire state of Illinois at nearly 20 percent.

Employment+

Employment within Cairo is a little over 37 percent, which calcuates out to less than 650 people currently employed. This figure is considerably lower than the statewide rate of 60 percent.

Employees of private companies account for nearly 60 percent of all employment within Cairo, with the next closest class of worker being local, state, or federal government related. Retail Trade, health Care and Social Assistance, and Transportation and Warehousing are the largest industries within the town. Office and Administrative Support Occupations, Healthcare Support Occupations, and Education In-

Education+

In terms of educational attainment within Cairo, nearly 84 percent of the population is a High School Grad or higher. Post-secondary attainment is drastically less as only about 16 percent of residents have a Bachelor's Degree or higher. This is less than half of the states population of 37 percent. Specifically, within the population of 25 years and older, this percentage is halved again. A High School Diploma or equivalent degree, accounts for one third of the educational attainment for this age range. This lack of post-secondary attainment within the town's population is also likely a contributing factor in the increased need for public housing.

Site Analysis+

financial zones, sun, circulation, soil

RDAs and TIF Districts+

The majority of the site is located within the Redevelopment Project Area (RDA) that has already been proposed by the Cairo Development Committee. This southeast area of town includes many open, empty lots already cleared for redevelopment or dilapidated buildings planned to be demolished and removed in the near future. The RDA also functions as a Tax Increment Financing (TIF) district. TIF is a development tool that helps finance specific improvements to properties within the RDA by utilizing tax revenues that are generated by the project after completion. The Cairo Development Committee also stated the following within the RDA proposal:

"It is the policy of the City to consider the judicious use of TIF for those projects which demonstrate a substantial and significant public benefit by constructing public improvements in support of developments that will create new jobs, retain existing jobs, eliminate blight, strengthen the economic base of the City, increase property values and tax revenues, create economic stability, and stabilize and upgrade existing neighborhoods and commercial/industrial areas. Priority will be given to projects that meet these goals."

Design Consideration

Designing a new mixed-use development within this RDA fits in with the local vision for the town, as this is the zone designated for redevelopment by the residents and leaders of Cairo. This consideration of the local vision will allow the project to capitalize on the various financial opportunities and local benefits and also helps add realism to the project. Additionally, the project will aim to satisfy several criteria established by the Cairo Development Committee to offer genuine social, economic, and environmental improvements to the town.

Figure 42

Figure 43

Sun Path+

Cairo receives roughly 12 hours of daylight on average throughout the year. With most of the buildings within and around the site being no more than a few stories tall, the site receives good access to sunlight. During the summer, the skies are generally more clear. However, during winter months, party cloudy to overcast skies are significantly more common.

Design Consideration

The design should shade users from the hot sun in the summer months and minimize solar heat gain. In turn, the design should also maximize the sunshine during the cloudier winter months. The project should also be mindful not to block sun access to neighboring sites.

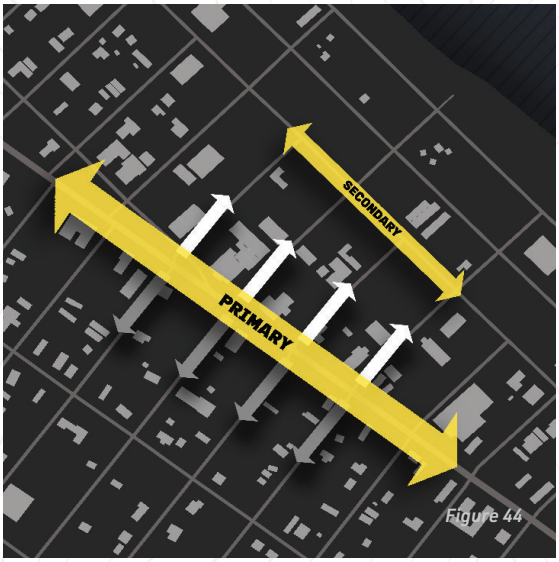


Figure 44

Main Street Disconnect+

Most of Cairo's traffic is vehicular in nature. This creates an unfriendly pedestrian environment, especially in the downtown area near the site. Washington Ave., which also functions as U.S. Highway 51, receives the highest traffic of any street in town. While it doesn't receive as much traffic as I-57, it still lacks any stop lights, signs, or proper crosswalks to encourage pedestrian movement across it.

Design Consideration

A gas station could encourage visitors to explore Cairo more practically and intentionally. Additionally, connecting the east and west sides of Washington Avenue could help create an open, inviting, and connected feel.

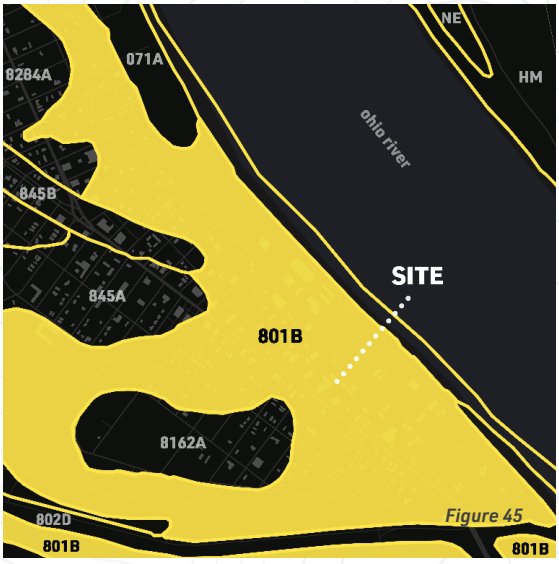


Figure 45

Soil+

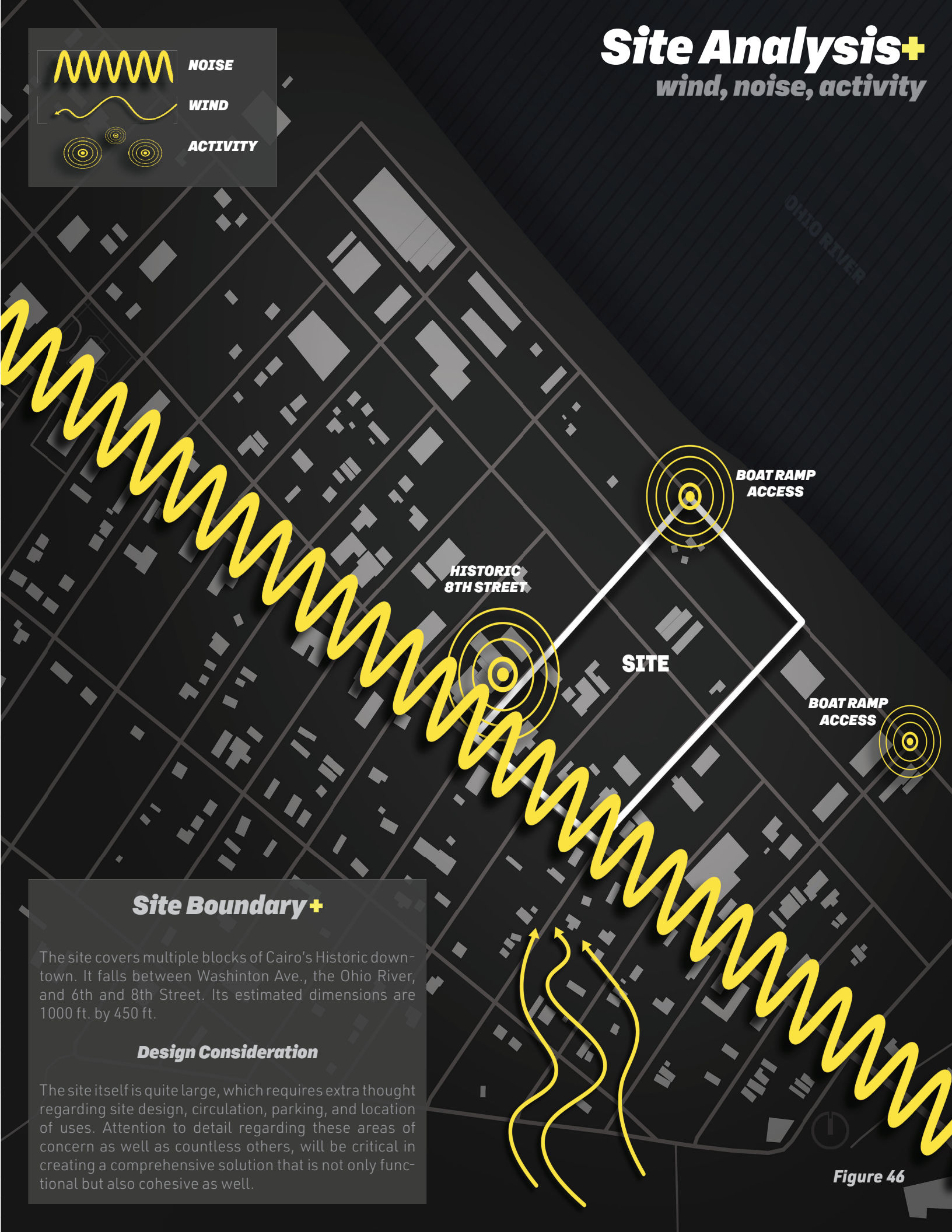
The United States Department of Agriculture survey classified this 801B soil composition as a 'silty loam.' This soil type is defined as 'containing no less than 70 percent silt and clay and not less than 20 percent sand.' Additionally, a geologic survey from the Illinois Department of Natural Resources shows that this surficial sediment runs to a depth of roughly 25 ft. Below that, the parent material consists primarily of coarse sand and runs down to more than 130 ft below the surface. 801B soil type also has a 'low' corrosion risk to steel and a 'moderate' corrosion risk to concrete.

Design Consideration

The design needs to consider the silty loam soil, materials, cost, risk of corrosion, foundation type, and many other factors.

Site Analysis+

wind, noise, activity



Site Boundary+

The site covers multiple blocks of Cairo's Historic downtown. It falls between Washinton Ave., the Ohio River, and 6th and 8th Street. Its estimated dimensions are 1000 ft. by 450 ft.

Design Consideration

The site itself is quite large, which requires extra thought regarding site design, circulation, parking, and location of uses. Attention to detail regarding these areas of concern as well as countless others, will be critical in creating a comprehensive solution that is not only functional but also cohesive as well.

Figure 46

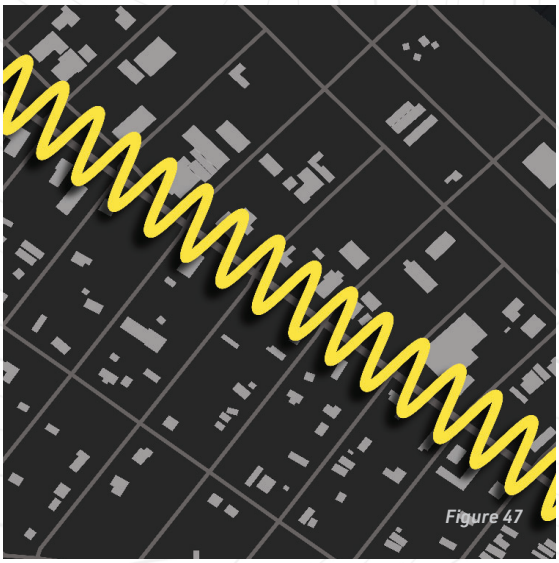


Figure 47

Noise+

Washington Avenue, which runs through the middle of town and functions as the Ohio River Scenic Byway, is the primary source of noise pollution within and around the site. It is primarily vehicular in nature. Alternatively, while the Ohio River is blocked by the flood wall, it still gives off a pleasant white noise.

Design Consideration

The design should explore ways to act as an open and inviting gateway to the site while reducing the vehicular noise caused by Washington Avenue to the west. This could be through the addition of trees and vegetation. On the east side, the design should explore enhancing the pleasant white noise from the river.

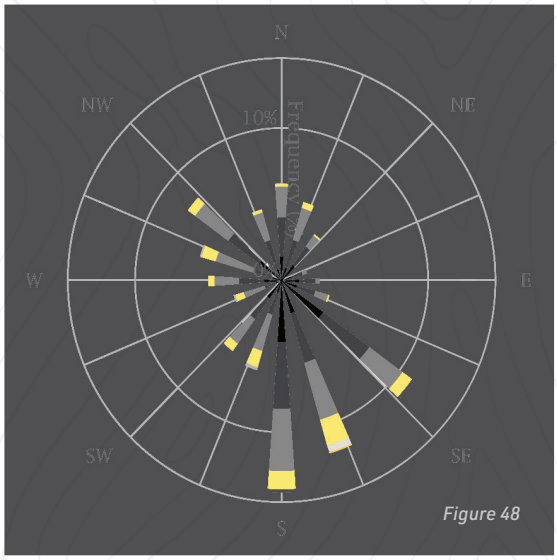


Figure 48

Wind+

Due to the low elevation in this region, the site does not receive significant wind. It averages around 8 miles an hour most of the year, primarily out of the south. Winter is typically windier, while the summer months are generally more calm than the average.

Design Consideration

Due to the lack of significant wind, especially in the warmer months, the design should pursue other sources to provide a cooler and more enjoyable environment for users.

Figure 49

Activity+

Besides the traffic on Washington Street, most of the activity occurs in the boat ramp access areas (B, C) or on 8th Street (A). 8th Street and Commercial Street are part of what once was the epicenter of economic activity back when Cairo was a thriving town. The Gem Theater is located on this street and is one of the only significant buildings left standing, albeit in abysmal condition.

Design Consideration

Having the 8th and Commercial streets be the social heart of this downtown development pays tribute to their original economic roles. To shift vehicular traffic away from this area, boat ramp access (B) could potentially be relocated and merged with the south access (C).

Local Issues+

No Housing, No Food, and No Business

Long-Distance Commutes+

Due to the severe lack of shopping options in Cairo, residents are forced to travel out of town to buy groceries, medications, or other necessities. There are a couple of options within 20 minutes, but many residents say they don't have everything they want or need. This leaves the remaining options more than 30+ minutes away and often requires traveling out of state to Kentucky or Missouri. With the lack of amenities, shopping options, a functional gas station, or simply due to an out-of-town job, there are countless reasons for these long-distance commutes.

Design Consideration

The design should address the lack of an in-town gas station, grocery and shopping options, amenities, housing shortages, employment options, and other local economic concerns. Creating multiple local options would minimize the need for residents to travel out of town, attract potential residents or businesses, and encourage local economic activity and circulation.

Figure 50

Figure 51

Business Isn't Booming+

Many businesses have tried to start in Cairo, but most ended up closing back up. The residents of Cairo are too used to this, seeing people come and then leave. However, many remain optimistic about future development and the revitalization of their town. They even formed the Cairo Economic Development Committee, which assists in matching business programs, offering tax incentives, and clearing properties to help attract businesses to the area.

Design Consideration

The design should consider long-term stability as a core focus in both residential and commercial capacities.


Figure 52

Food Insecurity+

A food desert is a location that lacks access to fresh, healthy food options, i.e., grocery stores, farmers' markets, etc. Within the past few years, news of a new grocery store has lifted the spirits of local residents. While this would greatly help the community, as of 2023, it still has yet to open. This underserved community needs more long-term stability when it comes to food security. Additionally, other than a single barbeque restaurant, *Shemwell's Barbecue*, Cairo doesn't have many local options for dining either.

Design Consideration

Introducing a variety of food-focused options, such as a grocery store, restaurants, and farmers' markets, would improve access to healthy food and increase local dining activity.


Figure 53

Public Housing Crisis+

Within the past decade, several public housing facilities such as Elmood, McBride, and, recently, the Connell F. Smith have been shut down. This has displaced hundreds of families, with most being forced to leave town. Only a tiny handful of vacant, affordable units remain in Cairo.

Design Consideration

Providing new, affordable housing will have a huge impact and benefit for the community of Cairo. The commercial spaces within the new mixed-use development will offset the cost of the subsidized housing. These units will ensure long-time residents have access to quality, affordable units and will no longer be forced to leave town.

Site Analysis+

Zoning, Grid Layouts, and Open Lots

Zoning+

The downtown district is composed predominately of improved commercial and tax-exempt parcels. Introducing density into the downtown area through the use of a mixed-use development will require rezoning most of the downtown area. Rezoning is common, and can help tremendously in bringing in more money to the area.

Design Consideration

For this thesis, these sites will need to be rezoned into mixed-use zoning. This will allow for a greater density of population, a wider variety of businesses, and better risk diversification.

Figure 54

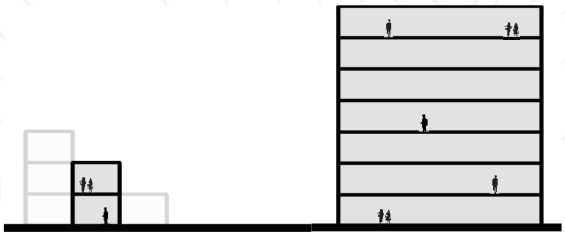
Figure 55

Grid Sizing+

I attempted to analyze the grid of the downtown area of the site in 1998 to get a feeling for common widths and lengths of buildings before most were demolished. I found that 65' was the average width (with the lowest averaging around 30' and the highest over 100'). The average length was 120' (with the lowest averaging around 90' and the highest over 150')

Design Consideration

The final design should consider and explore these historic grid sizes. By doing so could help with the proper scaling of buildings, corridors, and block formations that would create a more considerate solution.



Average Building Height (1-3 Stories)

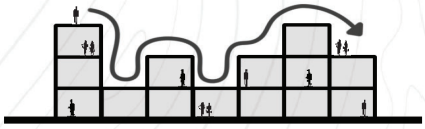
Connell F. Smith Building (7 Stories)

Building Heights+

Most of the buildings in this area are 1-3 levels. Besides the town's many churches, the tallest occupied building in Cairo is the Connell F. Smith building, a low-income, public-housing apartment building. It has 119 units and is seven stories tall.

Design Consideration

Keeping the building heights similar to the existing context will be critical in maintaining an appropriate scale for the project. One interesting aspect is the slight modulation in building heights. The gem theater is over three stories tall, and next to it are 1 and 2-story buildings.



Potential Level Interconnectivity *Figure 56*

Figure 57

Lack of Density+

Downtown Cairo does not seem like downtown at all. What once was a bustling area full of buildings, businesses, people, river activity, etc., is now a barren wasteland on its last breath before becoming a ghost. The crumbling buildings have continued to waste away. Work to demolish and clear these lots has continued to progress over the years, eliminating any remaining signs of downtown life and economic activity.

Design Consideration

The project aims to introduce density within this downtown area through a mixed-use development. This will bring economic activity, housing opportunities, a sense of identity, and life back to this district and its people.

Site Analysis+

Vegetation, Lot Usage, and Notable Features

Green Space + Tree Cover+

While the site comprises multiple downtown blocks, it still contains plenty of open, green space. This is because most of the lots are abandoned or continuously cleared for future redevelopment. However, there exist very few trees overall across the downtown area. This lack of canopy and shade makes the site feel very barren.

Design Consideration

In order to create an inviting space that is comfortable to residents and visually inviting to visitors, it will be important to incorporate more vegetation (trees, plants, shrubs, grass, parks, etc.) throughout the design.

Figure 58

Figure 59

8th street + Commercial Avenue+

Although many buildings are in rough shape, the brick paving along 8th Street is in excellent condition, save for minor discoloration and tire marks. This street was home to much of the town's good and bad history. Coincidentally, the intersection of 8th and Commercial was the location of the hanging of Will James in 1909. This dark history should be understood but not promoted.

Design Consideration

The final design needs to be mindful of the history of this area. It should pursue a solution that is both thoughtful and flexible. It will be essential to turn this controversial town square back into a usable and inviting space for all people, especially the residents of Cairo.


Figure 60

Open Spaces and Broken Places+

Downtown Cairo is home to an eerie blend of open space and half-destroyed buildings. An ongoing effort exists to demolish these buildings to provide a blank slate to potential businesses. Ironically, with the amount of open space, there is a severe lack of usable public areas.

Design Consideration

Redeveloping the downtown district can help eliminate the safety risks associated with the destroyed buildings and rubble. Additionally, the final design should incorporate various public areas, parks, and other flexible spaces for the community to engage with and enjoy how they see fit.


Figure 61

Materials, Textures, Colors+

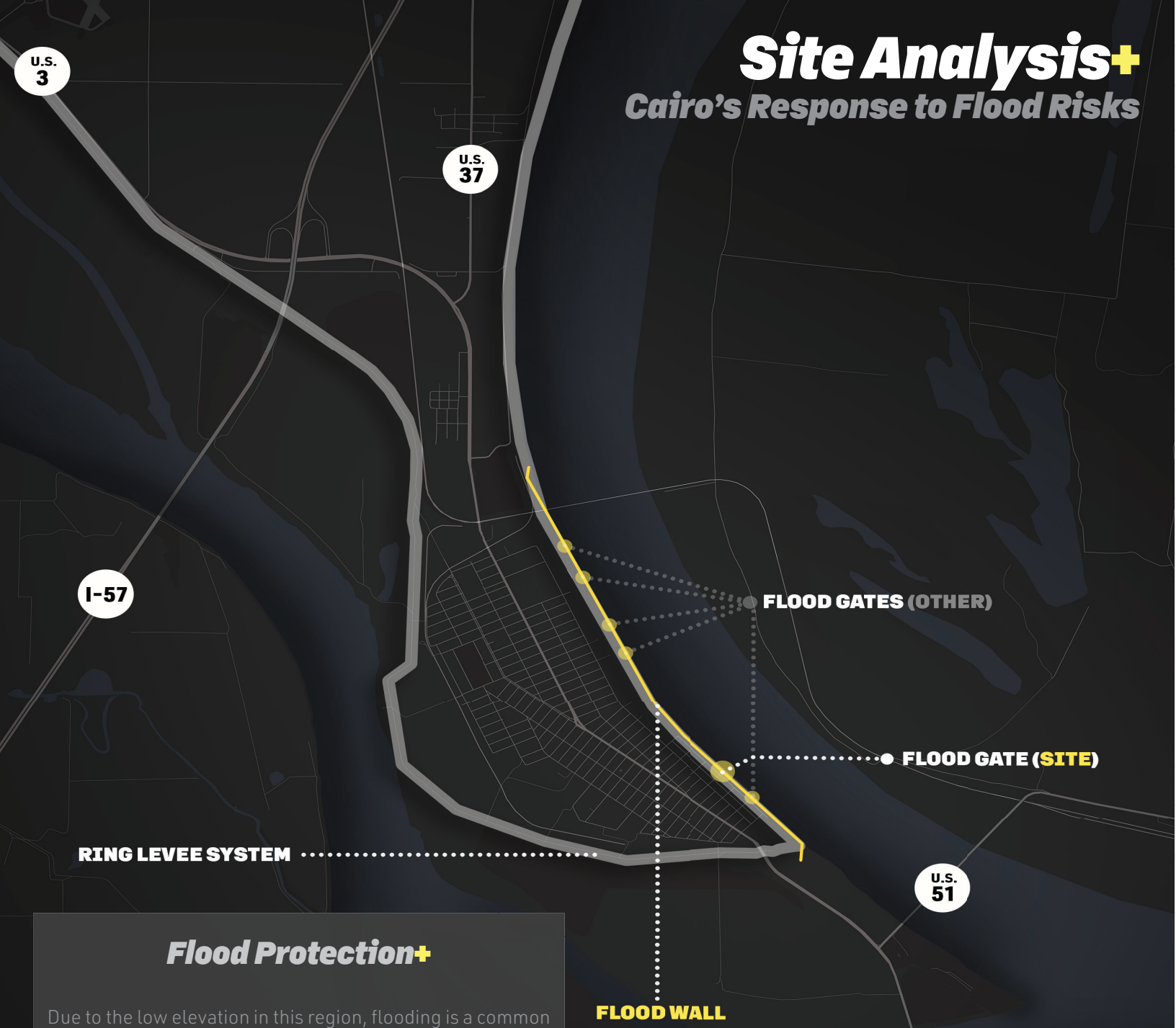
Brick and concrete are the dominant materials in the downtown area and the town. Many of these materials have begun to fade, erode, or fall apart. The town lacks any vibrancy of color, and the degrading textures, while contributing to the character of the ghost-like town, generally leave much to be desired.

Design Consideration

Sustainable elements, such as timber or recycled materials, should be the focus of material exploration. Additionally, employing traditional brick materials in strategic areas could help the project integrate easily into the surrounding context and offer a modern reflection of Cairo's history and charm.

Site Analysis+

Cairo's Response to Flood Risks



Flood Protection+

Due to the low elevation in this region, flooding is a common occurance. Cairo specifically, sits at the lowest point in Illinois, making flooding a significant source of concern. However, Cairo employs 2 primary measures that protect the town from these flood risks.

- Ring Levee - A ring levee is essentially an area that is fully encompassed on all sides by a levee system to protect from floods.
- Flood Wall - Built to withstand a 500 year flood. Employs a series of flood gates for access to the river (i.e. boat ramp).

Design Consideration

It will be essential to design with flooding in mind, even though the site is protected by levees and a flood wall. The potential of a breach still exists along the wall, so the design needs to consider this risk. Additionally, exploring how the flood wall can be integrated into the design could prove interesting in connecting the community back with the river.

Figure 62

Figure 63

Flood Wall+

On the east side of Cairo is a large concrete flood wall spanning over 2 miles long. It is over 12 feet tall and was deemed necessary after the Ohio Flood of 1937, when the water crested to nearly 60 ft. The Cairo Flood Wall is designed to protect the city from flood waters up to 64 ft.

Design Consideration

The imposing height of the wall makes the site very closed off in certain areas and does not allow for views of the river. The final design should explore ways to implement the flood wall into the solution in order to maximize views of the river, ensure safety from potential flood risks, and provide an overall better connection for the community.

Figure 64

Flood Gate+

Visitors driving in from the north side of town will be greeted by a giant red floodgate with "CAIRO" spelled out in big white letters. This "Big Subway Gate" was built in 1914 and spans over 60 feet wide, 24 feet high, and five feet thick. The counterweights to raise and lower the gate weigh nearly the same amount so that it would only require the effort of 2 people to operate it. In an emergency situation where the levees north of Cairo are detonated to relieve the water pressure, the floodgate would close, making the city of Cairo an isolated but protected island.

Design Consideration

The gate does not appear to be operational. However, it is an iconic marker of Cairo and could potentially be reflected in the design somehow to help tie the project to the rest of the town.

Figure 65

Levee System+

A levee is a ridge or embankment of soil used to prevent flood waters from entering a specific area. They often are over 10 feet tall. Cairo is completely surrounded by levees in a system generally known as a ring levee. These levees were built around 1885 when the U.S. Army Corps of Engineers adopted a "levee-only" policy to maintain and control the Mississippi River and its tributaries. Other than seepage in certain areas, the levees have more or less held up.

Design Consideration

While the levees don't necessarily have a substantial impact on the site other than the concern of minor groundwater seepage, flood resilience should still be a priority.

Site Analysis+

Historic Districts + Notable Buildings

Cairo Historic District+

The Cairo historic district is separated into two distinct areas: the downtown and the park districts. In 1969, the district and its constituent buildings were placed on the National Register of Historic Places. While a few buildings remain intact, many have already been demolished.

Design Consideration

A final design that utilizes, improves, or at a minimum, leaves these historic buildings intact should most definitely be considered. As one of the many emphases of this thesis, historic restoration is a potential avenue that could be explored.

Figure 66

Figure 67

Cairo Customs House

The Cairo Custom House was built in 1872 by Alfred Mullett, who was the the United States Supervising Architect at the time. It was designed in Italianate style, which was a rarity among most federal buildings. It originally served as a U.S. customs house that collected tariffs on imports that were traded along the Mississip river. Other uses inculded a courthouse, post office, govermnet offices, and later the town's police station in 1942.

Figure 68

Magnolia Manor

The Magnolia Manor was built in 1869 by the local businessman, Charles A. Galigher. It was built in a beautiful Victorian style, featuring 14 rooms with double walls and large air spaces to keep out the local dampness. Galigher was friend with Ulysses S. Grant during Grant's time in Cairo during the Civil War. The manor was home to a lavish celebration for Grant after serving two terms as president. .

Figure 69

Gem Theater

The original Gem Theater opened in 1910 during Cairo's peak as a bustling transportation hub. It opened to three photoplays and a group called the Cora Youngblood Carson Sextette. In the following years it was then was destroyed by fires in both 1929 and 1934, and subsequently rebuilt each time before reopening to the public in 1936 as an art deco theater. The Gem Theater continued operating for nearly 50 more years before finally closing for good in 1978.

Figure 70

Ward Chapel A.M.E. Church

Ward Chapel African Methodist Episcopal Church was organized in 1863 and was later officially dedicated as a church in 1875. During the Civil War, it served as a important gateway to the north due to its key geographic position. Specifically, Ward Chapel A.M.E. Church played a significant role for the Underground Railroad around the time of the Civil War. As a key station, Ward Chapel helped countless enslaved people get to freedom by helping them travel north to Chicago with a few staying in Cairo.

Figure 71

Cairo Public Library

The Cairo Public Library is housed in the A. B. Safford Memorial Building. Anna Eliza Safford built the library 1884, as a monumentto her late husband, A. B. Safford. It was designed by William & Wilcox of Chicago and St. Paul, MN, and constructed by Lancaster and Rice Manufacturing Company of St. Louis. A.B. Safford died in 1877, and seven years later, Anna Eliza Safford gifted this building to the citizens of Cairo.

Site Analysis+

Views Within + Around Site

Site Views+

Besides view '**H**', most of the immediate views into the east and northeastern sections of downtown are somewhat limited by the overgrown vegetation and array of broken buidings. From within the site, views to the east and northeast are restricted by the 12-foot flood wall. Views to the south and southwest are generally more open around the site. *Note*: The pictures to the right are from 2019 and before. Since then, several more of the dilapidated buildings have been cleared as part of the ongoing demolition.

Design Consideration

The site should be open and inviting. It should offer a balance of transparency to the public and privacy for the residents. The development should also have elevated public and private amenities to help minimize flood risks and maximize the connection and views of the Ohio River.

Figure 72

A

Figure 73

B

Figure 77

C

Figure 74

D

Figure 78

E

Figure 75

F

Figure 79

G

Figure 76

H

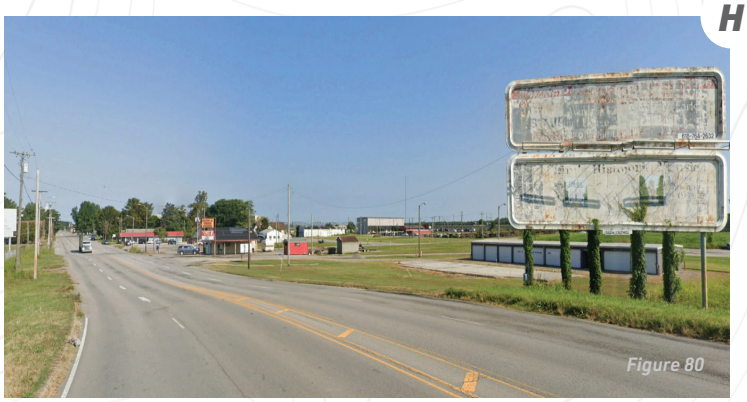
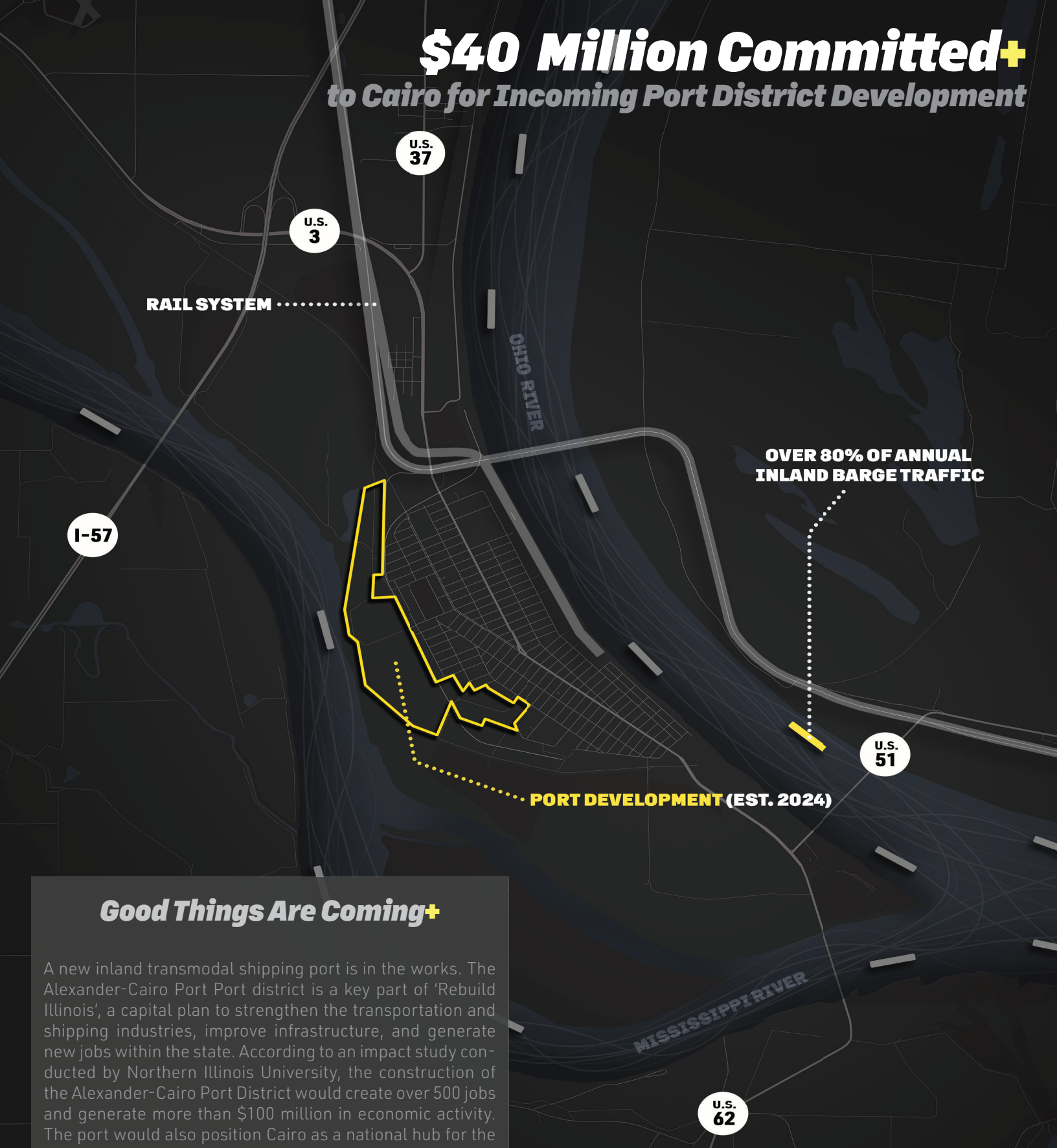


Figure 80

$40 Million Committed+

to Cairo for Incoming Port District Development



Good Things Are Coming+

A new inland transmodal shipping port is in the works. The Alexander-Cairo Port Port district is a key part of 'Rebuild Illinois', a capital plan to strengthen the transportation and shipping industries, improve infrastructure, and generate new jobs within the state. According to an impact study conducted by Northern Illinois University, the construction of the Alexander-Cairo Port District would create over 500 jobs and generate more than $100 million in economic activity. The port would also position Cairo as a national hub for the shipping and logistics industry in the U.S.

Design Consideration

The final design should consider this incoming port development as an opportunity to address current community needs, promote community engagement, and grow, diversify, and stabilize the local economy.

Figure 81

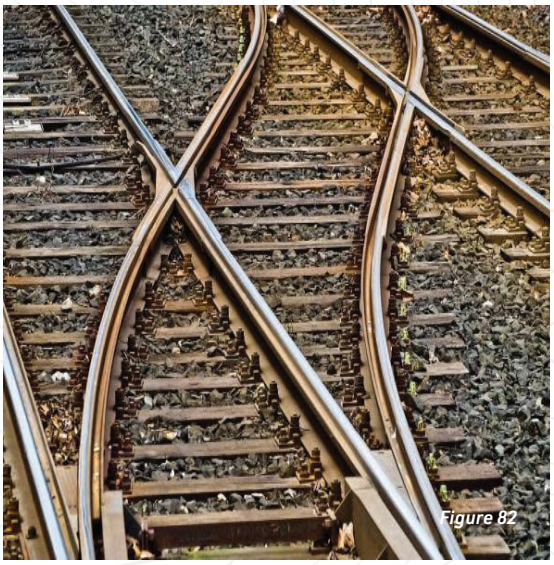


Figure 82

Multimodal Connections+

Cairo is a prime location for a new port due to its access to multiple modes of transportation and shipping. Various interstates and US highways such as I-57, US-51, and US-62 connect Cairo to the surrounding states and the greater Delta region. Two Class I railroads provide service within the Alexander-Cairo district. The Mississippi and Ohio Rivers are designated as parts of Marine Highways 55 and 70. The Cairo Regional Airport is located to the north of town.

Design Consideration

Access into Cairo is not the problem. Instead, the focus should be on creating amenities that benefit the existing residents and attract outside interest.

Figure 83

Huge Investment+

Southern Illinois' top exports include metals, plastics, mining, agriculture, industrial machinery, electronics, electrical, chemicals, and consumer products. Introducing a new international port will have long-term impacts on both Cairo and the region. Over $40 million in state funding has already been secured. The port is expected to bring in over $300 million of total investment. Many major logistics and commodities businesses have already committed to utilizing the new Cairo port for moving their goods and services.

Design Consideration

The design should explore ways to use local goods and materials to lower costs and help stimulate the local economy.

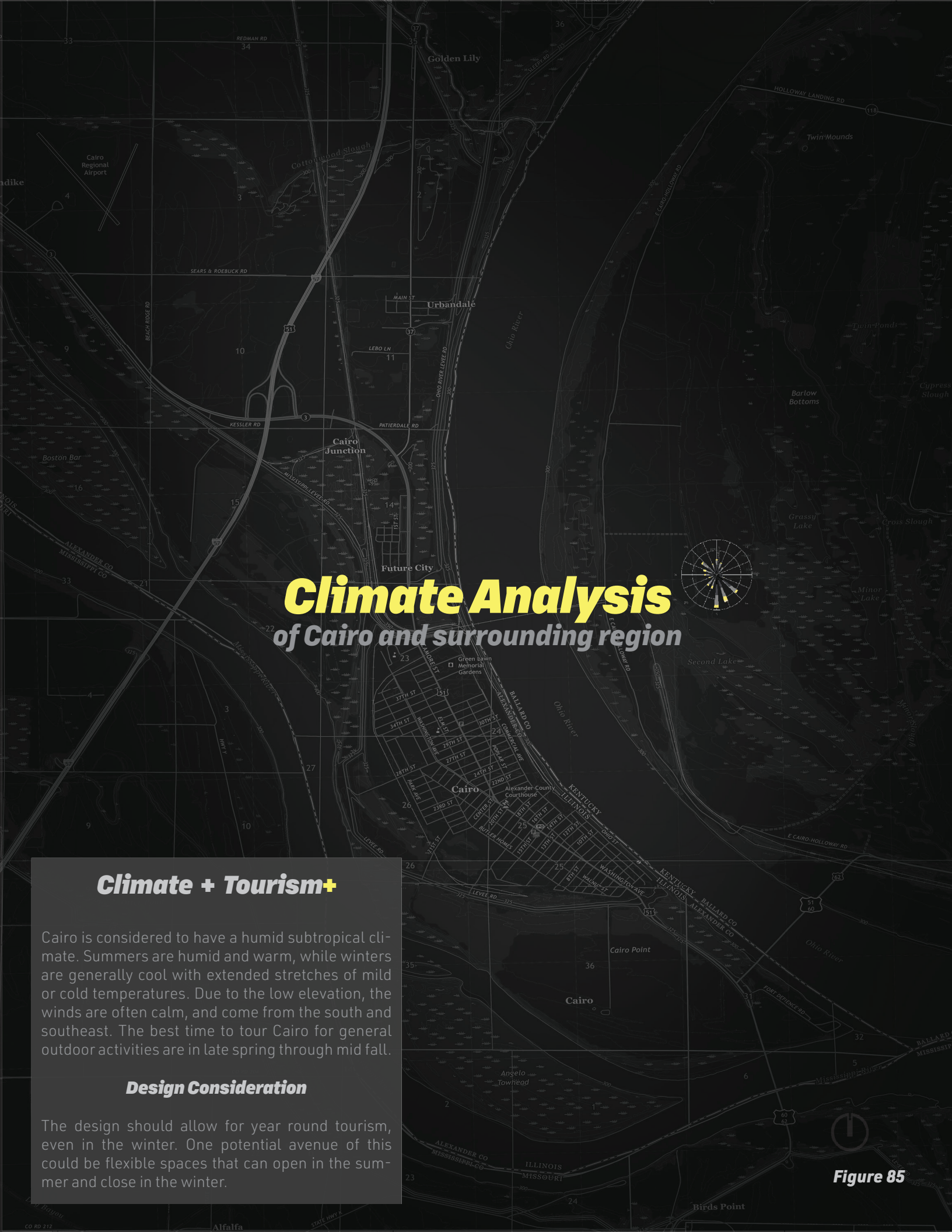
Figure 84

A Focus on Green+

Port officials are also pursuing companies that support green initiatives. The port will use electric equipment, such as electric ship-to-shore cranes, to make the port as 'green as it can possibly be .'The district also announced an agreement where the port could potentially provide services for American Patriot Container Transport's next-generation container shipping vessels. These would be faster, more cost efficient, and more environmentally friendly.

Design Consideration

The project should reflect and expand the green identity the port development is trying to establish. To that end, sustainability should be a core focus within the design.



Climate Analysis

of Cairo and surrounding region

Climate + Tourism+

Cairo is considered to have a humid subtropical climate. Summers are humid and warm, while winters are generally cool with extended stretches of mild or cold temperatures. Due to the low elevation, the winds are often calm, and come from the south and southeast. The best time to tour Cairo for general outdoor activities are in late spring through mid fall.

Design Consideration

The design should allow for year round tourism, even in the winter. One potential avenue of this could be flexible spaces that can open in the summer and close in the winter.

Figure 85

Highs and Lows

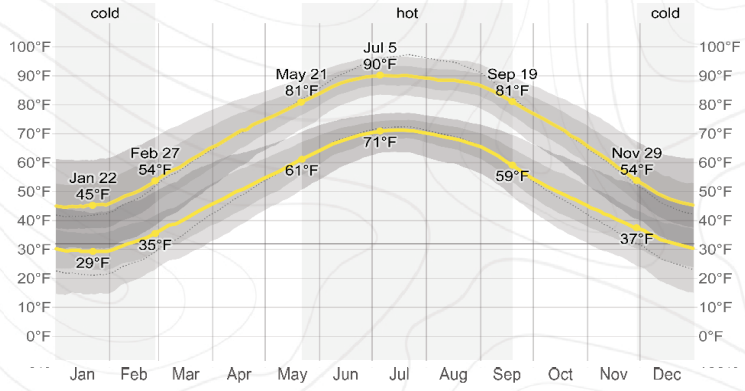


Figure 86

Wind Speed

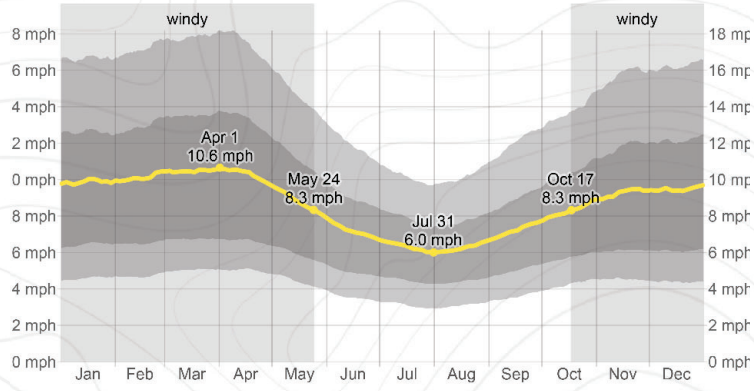


Figure 90

Snowfall

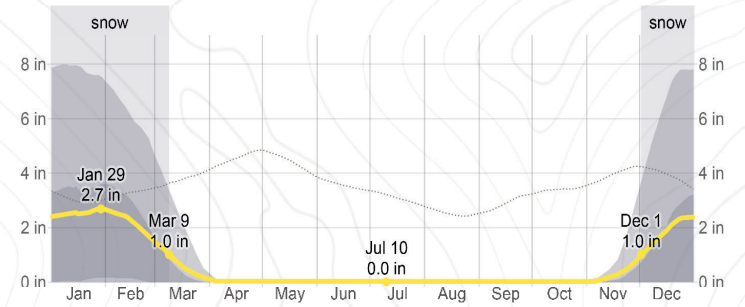


Figure 87

Humidity

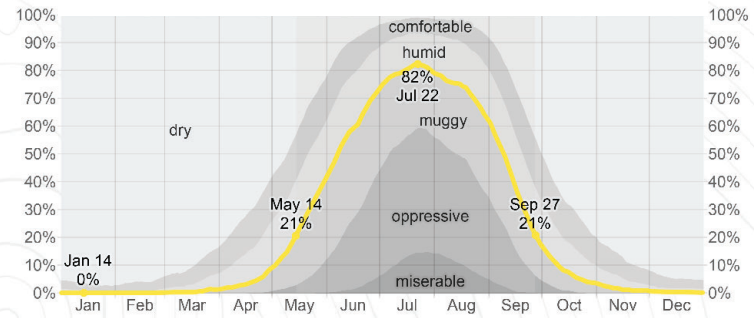


Figure 91

Rainfall

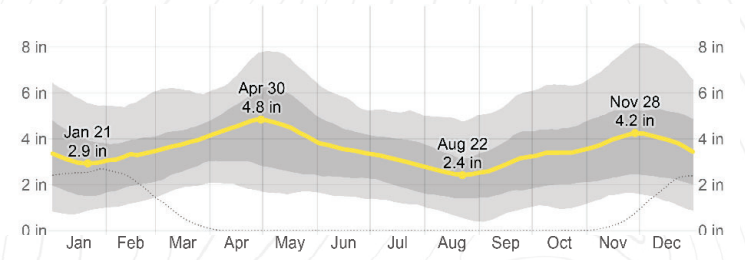


Figure 88

Daylight

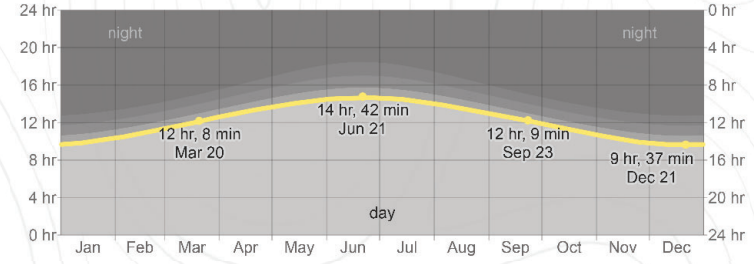


Figure 92

Cloud Cover

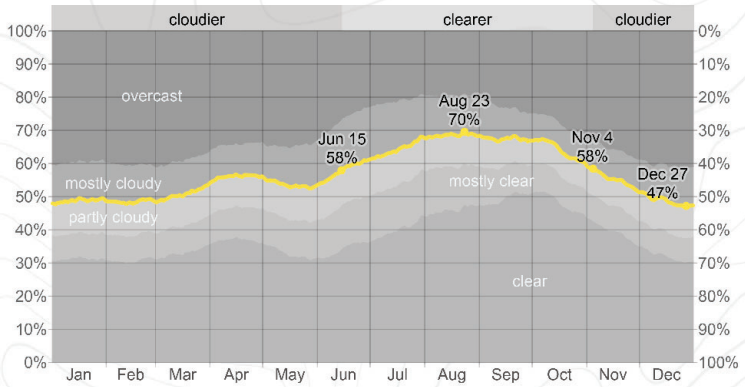


Figure 89

Temperature Ranges

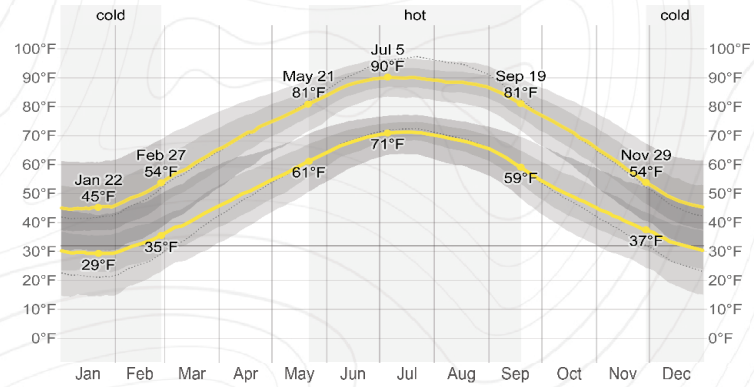


Figure 93

performance criteria

Design Assesment+

Site Context + Analysis+

Does the design respond to the site's location, orientation, and dimensions?

Does the design integrate with the surrounding land uses and urban fabric?

Does the design effectively address Cairo's needs? (housing, food insecurity, food insecurity, etc.)

Does the design respect and integrate the historical and cultural context of the site?

Does the design reconnect the community to the river?

Sustainability + Resilience+

Are passive and active sustainable design strategies applied?

Are sustainable materials and construction techniques are used in the design?

Does the design incorporate climate adaptation and resilience measures?

Spatial Organization+

Is the overall layout and organization of spaces effective and efficient?

Are inviting and functional public spaces (town center, parks, plazas, etc.) included?

Does the design consider parking needs and infrastructure?

Is there a balance between preservation and innovation?

How does the design address flexibility and adaptability of spaces?

Does the design effectively balance local needs with tourism appeal?

Does the design promote walkability, bikeability, and interconnectedness?

Is there flexibility in land use and building design?

Is access and circulation properly incorporated into the design?

Form + Aesthetics+

Are local architectural elements integrated into the design?

Is the design visually appealing and contextually sensitive?

Does the design contribute to Cairo's architectural and urban identity? Create a new identity?

Social + Cultural Considerations+

Does the design provide spaces for interaction and community-building?

Does the design incorporate inclusivity and universal design principles?

Does the design promote local businesses and economic development?

Are there spaces for community gatherings, education, and cultural activities?

Are relevant frameworks or strategies (New Urbanism, Sustainable Urbanism, Placemaking, etc.) employed?

Programmatic Elements+

Fueling Station+

Size: *~10,000* sq ft

Usage: Fueling station for vehicles, including gas and electric charging facilities.

Hours of Operation: *24/7*

Environmental Performance: Solar panels on the canopy, solar lighting, stormwater management, permeable pavement.
Support Services: Maintenance and cleaning, safety measures, on-site personnel assistance.
Qualitative Aspects: Central open, nature-filled areas within fueling canopies. Comfortable seating options.

Spatial Relationships: In close proximity to the hostel, grocery store, and foodwalk.

Grocery Store+

Size: *~5,000* sq ft

Usage: Retail space for selling groceries and other essentials (ground floor of hostel).

Hours of Operation: *8 AM - 10 PM,* Daily

Environmental Performance: Energy-efficient refrigeration and lighting, waste reduction initiatives, local product sourcing, waste reduction.
Support Services: Inventory management, customer service, cleaning and maintenance, ADA.
Qualitative Aspects: Well-lit and organized space, clear signage, pleasant shopping experience, includes local and regional produce and items.

Spatial Relationships: Proximity to the fueling station, central town square and foodwalk.

Hostel+

Size: *~20,000* sq ft

Usage: Temporary, low-cost accommodations for tourists and travelers, ground floor mixed-use.

Hours of Operation: *24/7* (Reception), specific hours for common areas

Environmental Performance: Energy-efficient lighting and appliances, natural ventilation, waste recycling, water saving fixtures.
Support Services: Reception, housekeeping, security, ADA accessibility, communal bathrooms
Qualitative Aspects: Cozy and secure accomodations, dormitory-style rooms, common areas for socializing, access to essential amenities.

Spatial Relationships: In close proximity to the fueling station and foodwalk.

Town Square + FoodWalk+

Size: *~100,000* sq ft

Usage: Public gathering space and dining area with multiple food and beverage options.

Hours of Operation: Food vendors operate from *8 AM - 10 PM*; public space accessible *24/7*

Environmental Performance: Solar lighting, local business inclusion, sustainable food sourcing, adaptive reuse, reduced automobile dependence.
Support Services: Food, beverage services, maintenance, sanitiation, waste management, ADA.
Qualitative Aspects: Diverse food and seating options, areas for socializing and relaxing, primary gathering area for the community and tourists.

Spatial Relationships: Central location within the development, in close proximity to all areas and programs, excluding the riverwalk.

Programmatic Elements

Housing Complex

Size: *~50,000* sq ft

Usage: Residential units, including studios, one, and two-bedroom units, ground floor mixed-use.

Hours of Operation: *24/7* (Residents), ground-floor foodwalk options: *8 AM - 10 PM*

Environmental Performance: Energy-efficient appliances, green roofs, rainwater harvesting, stack cooling, passive design, solar panels.
Support Services: Maintenance, management, security, waste management, ADA accessibility.
Qualitative Aspects: Comfortable living spaces, urbanized front porch for resident interactions and engagement, green spaces, central courtyard

Spatial Relationships: In close proximity to the foodwalk, community center, and fueling station.

Community Center

Size: *~60,000* sq ft

Usage: Multi-purpose wellness facility. Includes Business Incubator with educational resources, job training, and support for local entrepreneurs.

Hours of Operation: *8 AM - 10 PM,* Daily

Environmental Performance: Energy-efficient materials, systems, natural lighting, solar panels.
Support Services: Facility management, staff, ADA accessibility, restrooms.
Qualitative Aspects: Flexible, adaptable spaces, health and wellness activites, technology lab, library, open and inviting.

Spatial Relationships: In close proximity to housing complex, central town square and foodwalk.

Riverwalk

Size: *~30,000* sq ft

Usage: Public, elevated, riverside park with spaces for walking, recreation, and community events.

Hours of Operation: *24/7*

Environmental Performance: Flood resistant materials and design, native tree and plant species, solar lighting.
Support Services: Landscape maintenance, flood management and monitoring, public safety, ADA accessibility.
Qualitative Aspects: Elevated Promenade, Spaces for socializing, relaxing, observing the river, Railcar Linear Park.

Spatial Relationships: Along the Ohio River. One city block away from all other programs.

Historywalk

Size: *~15,000* sq ft

Usage: Interactive linear museum spread throughout development that showcases the history of Cairo through markers, exhibits, murals, etc.

Hours of Operation: *24/7*

Environmental Performance: Low-energy interactive exhibits, solar lighting, native vegetation.
Support Services: Maintenance, guided tours, marketing and promotion, ADA accessibility.
Qualitative Aspects: Engaging and educational experience, storytelling through a linear path filled with historical elements and exhibits.

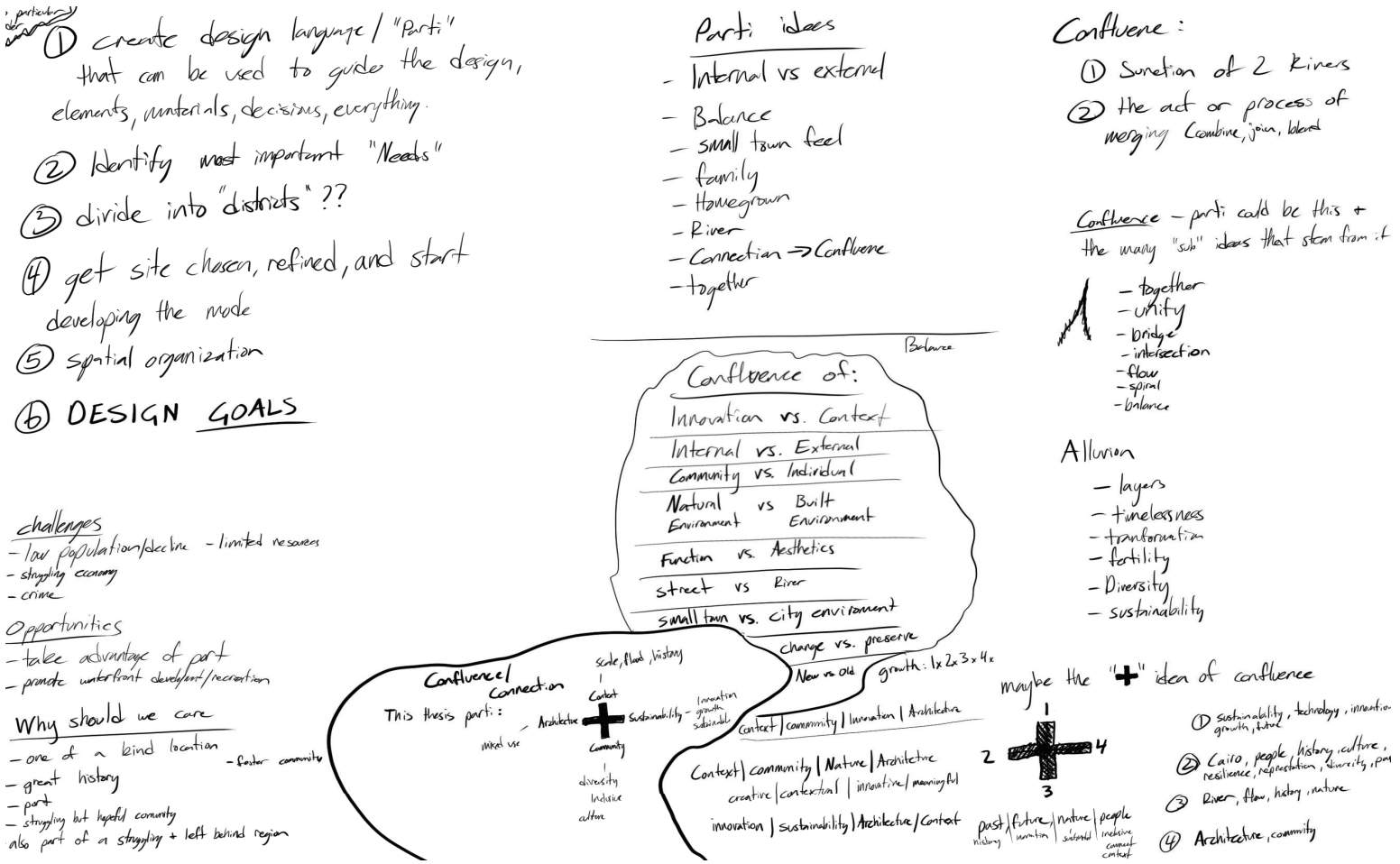
Spatial Relationships: Integrated throughout the entire development.

03

thesis design

"One of the great beauties of architecture is that each time, it is like life starting all over again." – Renzo Piano

Process Documentation+



Design Parti+

I thought it was important to first establish a meaningful design language for my design. This will help make the large-scale solution more cohesive and contextualized to the local community. The parti and title of this thesis are derived from the Cairo's unique context and location: '**Confluence**.' This term has two relevant meanings. It is primarily defined as the 'place where two rivers flow together and become one larger river.' In a more general sense it also describes a 'coming or flowing together, meeting, or gather at one point.' This second defintion led me to a more specific theme of: '**Connection**.' which became the underlying parti and primary driver of the design. This motif seeks to incorporate the concept of connection throughout the design in every possible sense.

Additionally, this connection also has a sub-function of '**Balance**.' Harmonizing opposing ideas such as innovative solutions and preservation of local history, allows the design to respect and enhance the local culture and community while optimizing the intended growth. By focusing the design in this manner, the project achieves a delicate equilibrium, ensuring that both progress and heritage are celebrated and woven into the revitalization of Cairo.

confluence.

noun.

- ***A coming or flowing together, meeting, or gathering at one point.***
- ***The place where two rivers flow together and become one larger river.***

join, connection, merge, union

Figure 94

Community

Growth ***Confluence*** ***Context***

Sustainability

Balance of:

Context *vs.* Innovation

Internal *(Residents)* *vs.* External *(Tourists)*

Community *vs.* Individual

Natural Environment *vs.* Built Environment

Function *vs.* Aesthetics

Street *vs.* River

Inside *vs.* Outside

Small Town *vs.* City

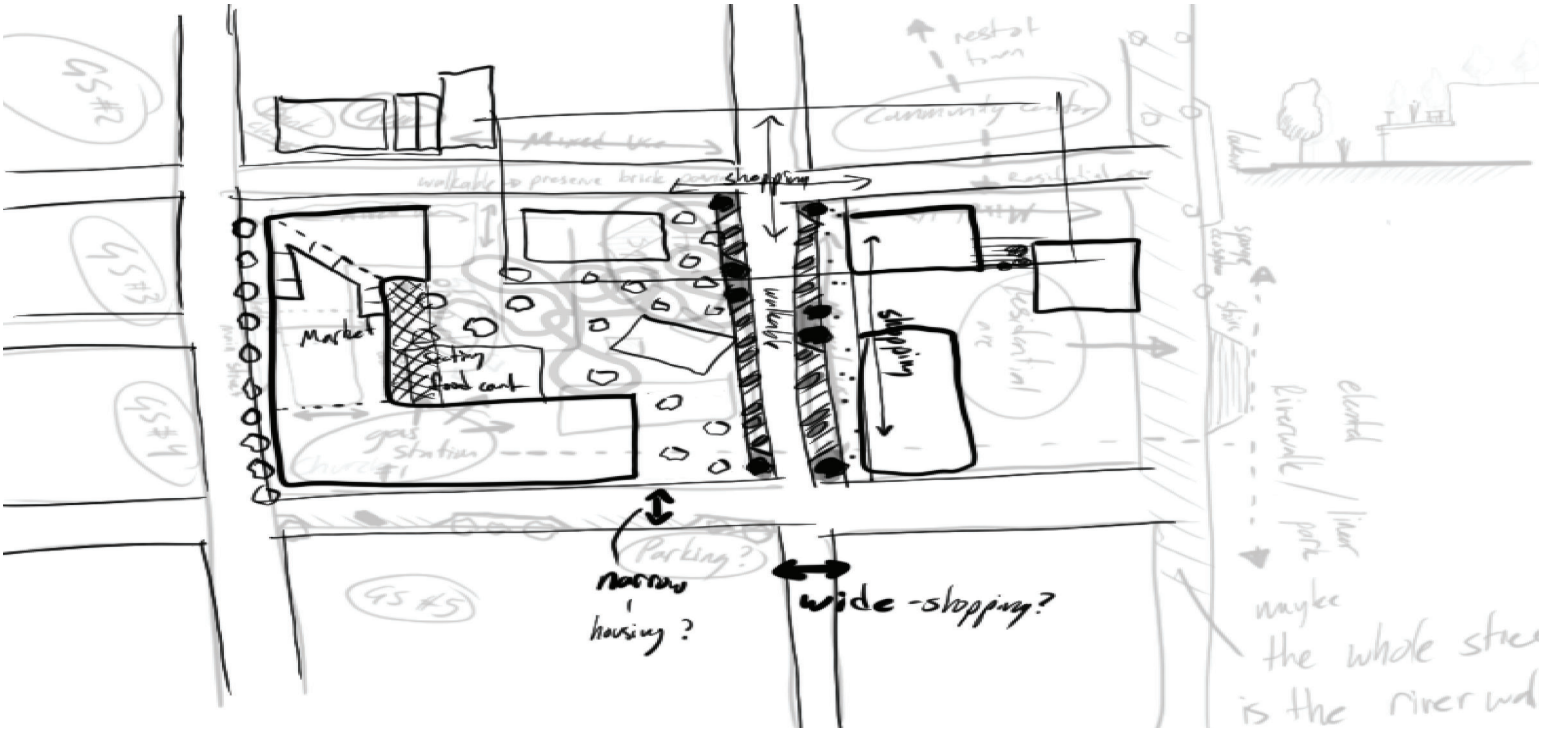
Preserve *vs.* Change

Old *vs.* New

∞

Figure 95

Process Documentation+

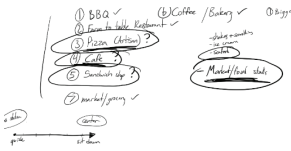


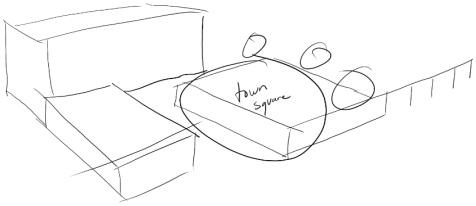
Fundamental Design Process+

The design process might seem extensive, dense, and disorganized. However, this is actually a reflection of how many of my design ideas are generated. It's not strictly a linear process, as I tend to jump from one area to another, with ideas emerging at various and unexpected moments. My initial focus was quantity, generating as many concepts as possible. Once all these smaller ideas are laid out, I thoughtfully and intentionally select, refine, sort, eliminate, or combine them. This approach was particularly crucial for my proposal, which features a large-scale, mixed-use development encompassing several typologies, each requiring unique solutions and considerations. These process diagrams reveal a small portion of the vast collection of information and ideas contributing to the final solution.

During the design process, one notable challenge I experienced was determining the optimal location and scale for each building. It was crucial for each typology to address not only its distinct challenges and related spaces, but also consider its and circulation with neighboring areas and buildings.

For instance, the housing complex required careful consideration of how residents would access the community center, interact with the gas station, travel to the grocery store, engage with the foodwalk, and navigate spaces designed for public interaction while also maintaining resident privacy. Reflecting on this intricate process, I recognized the importance of striking a balance between various design components to create a cohesive and functional urban environment.





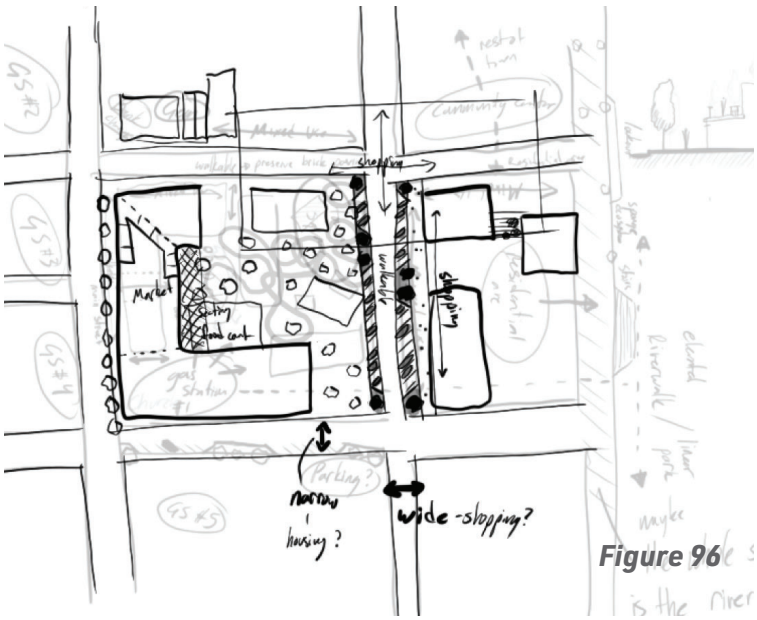


Figure 96

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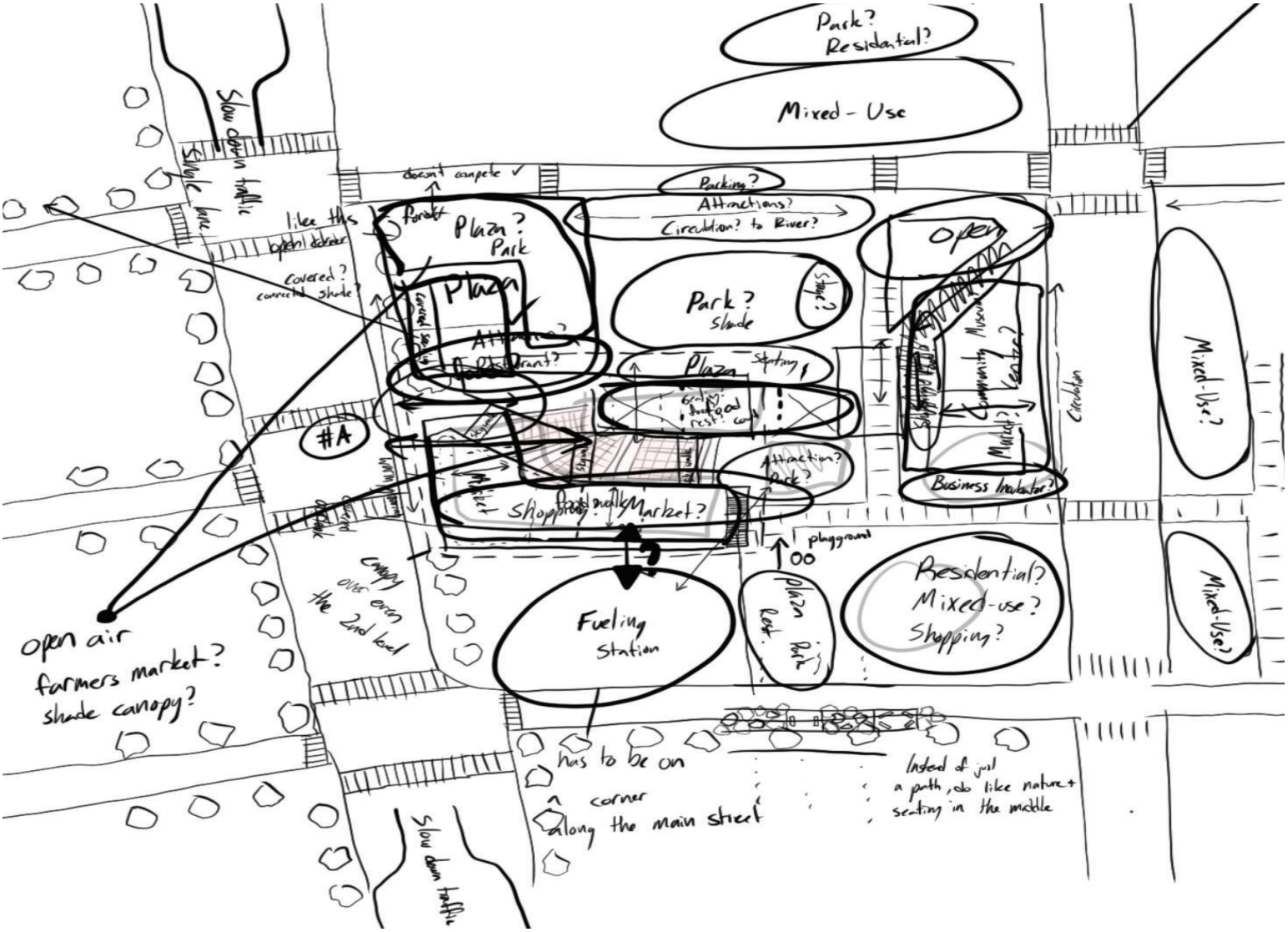

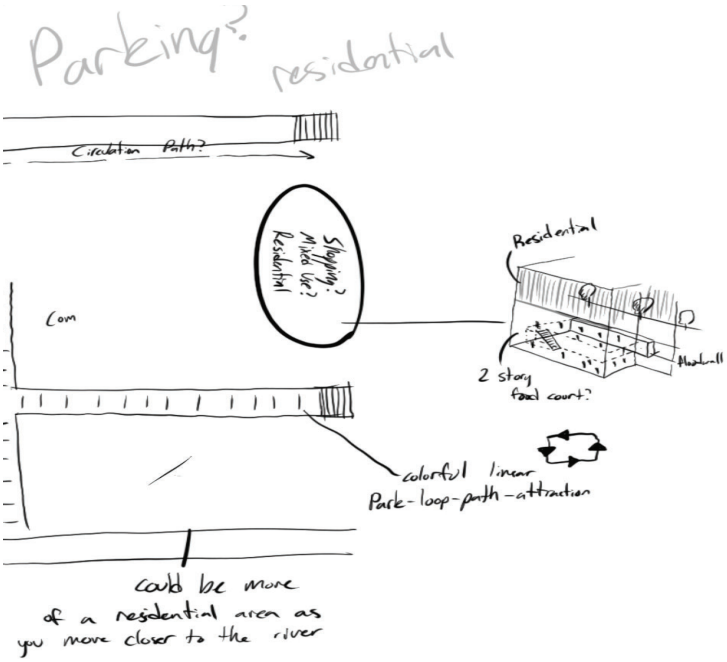

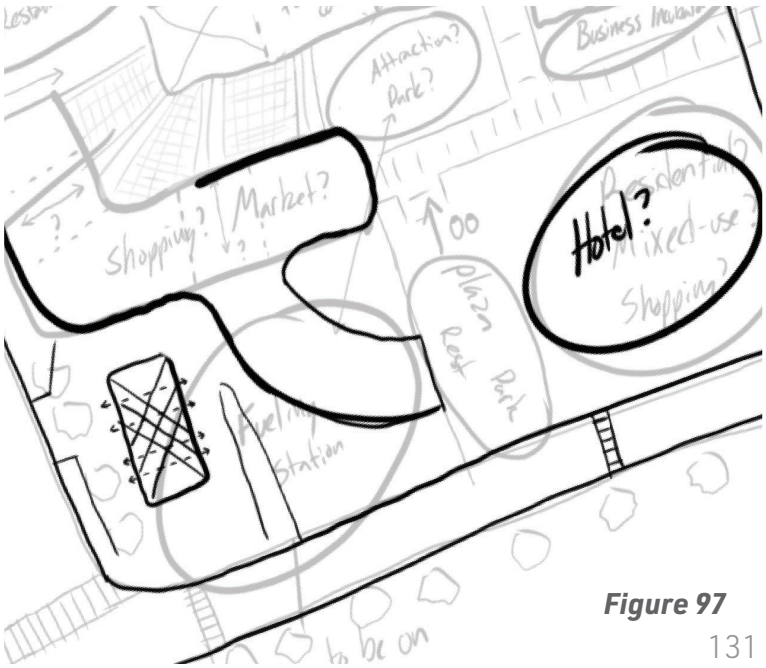

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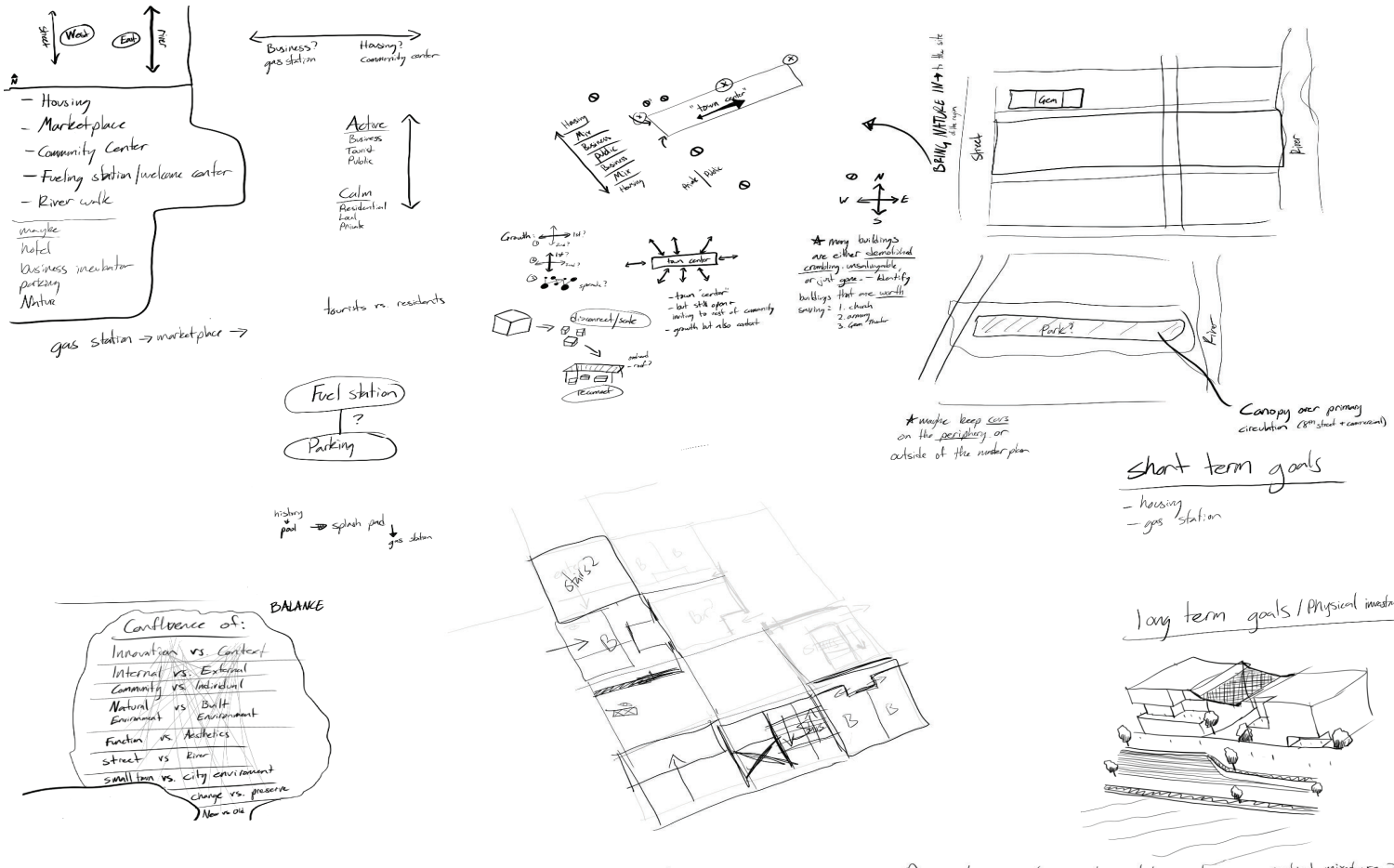

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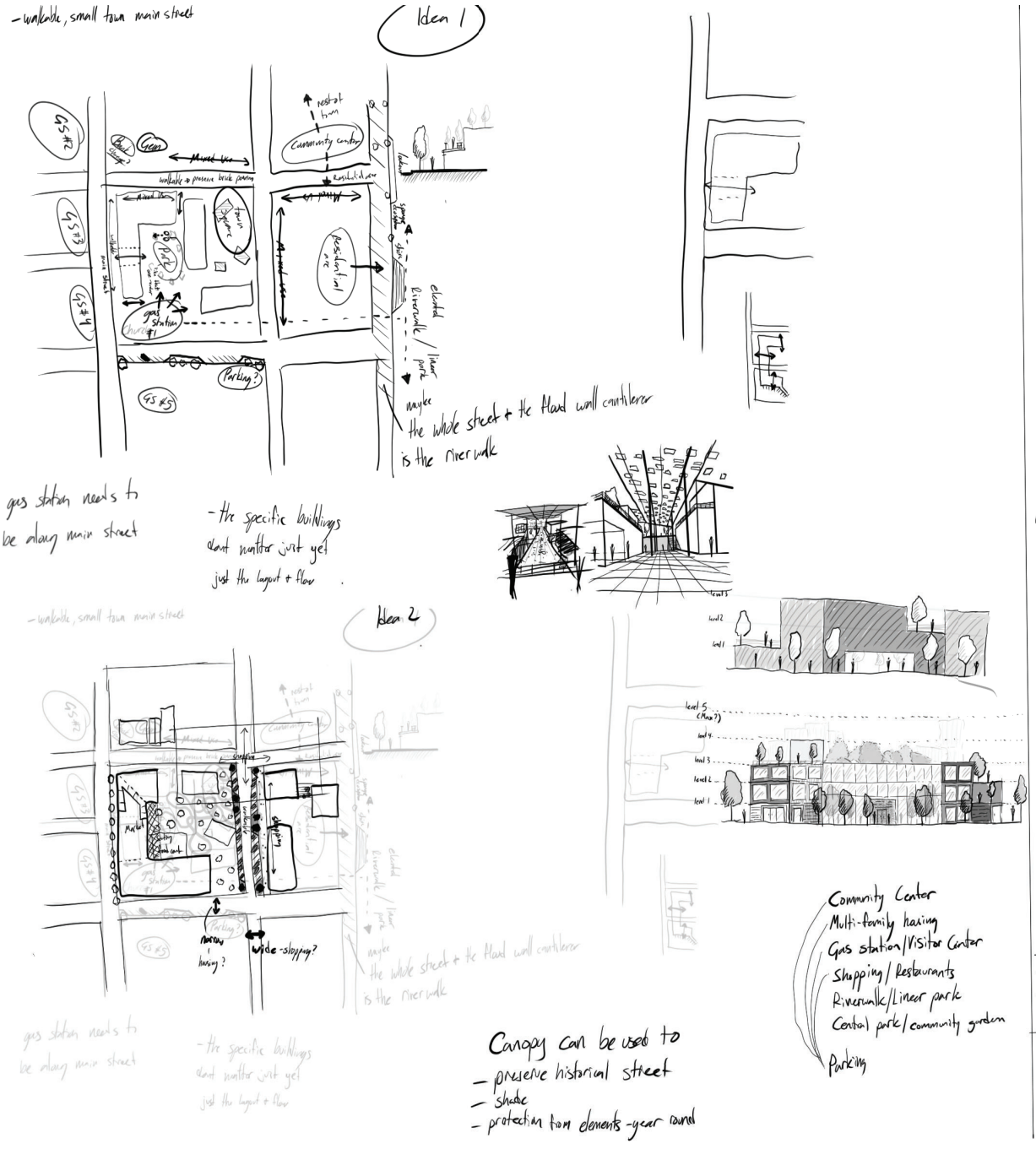

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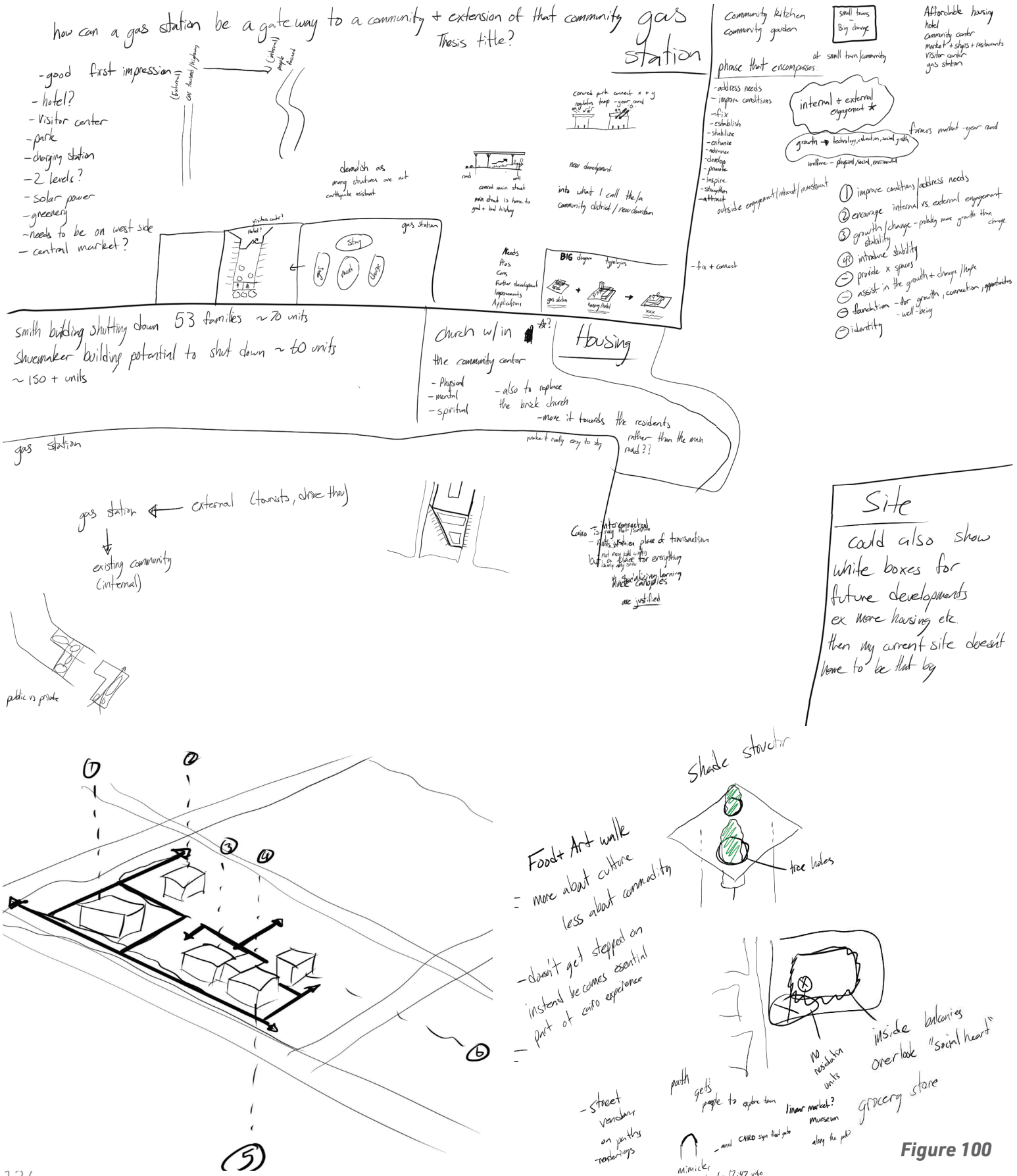

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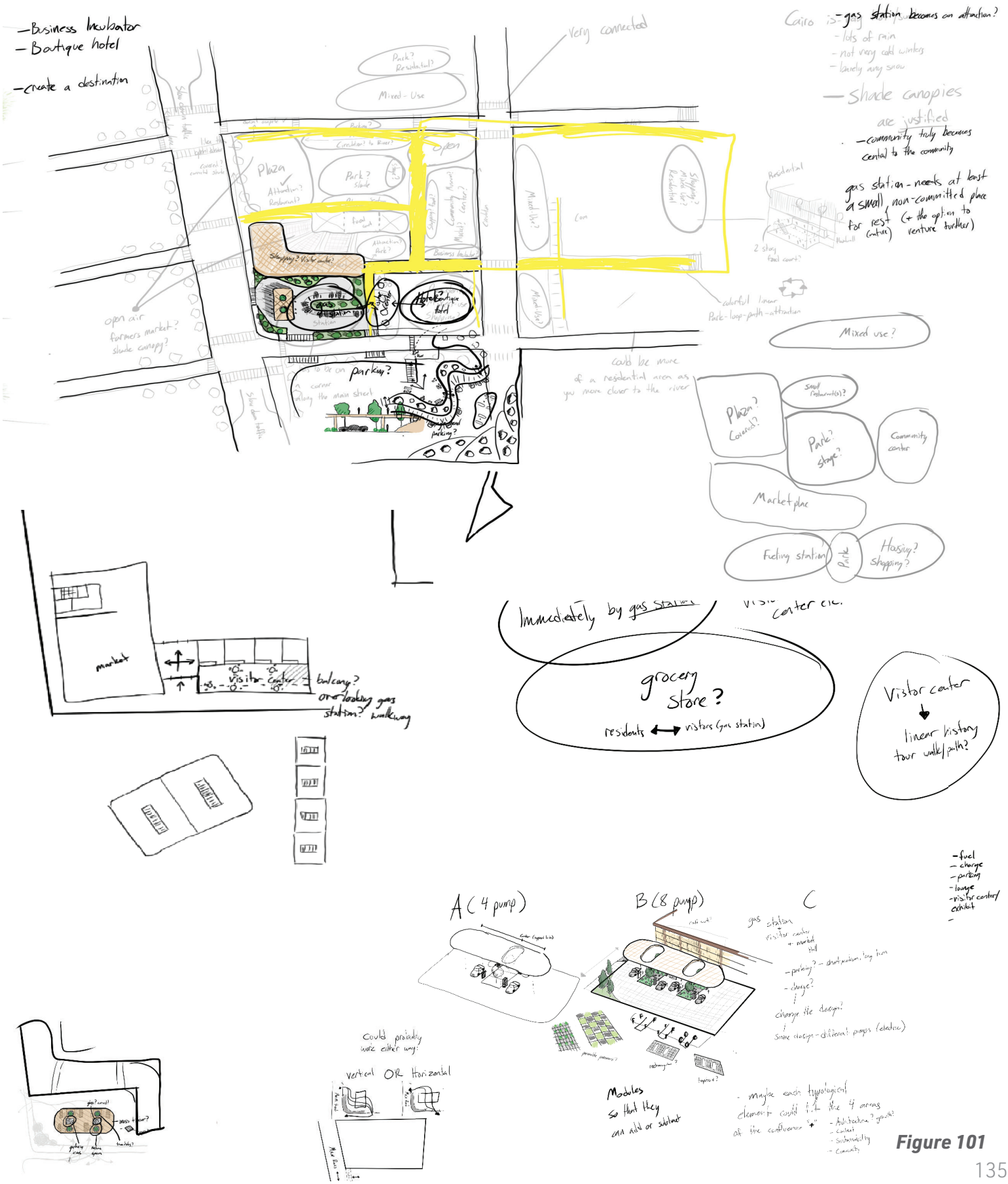

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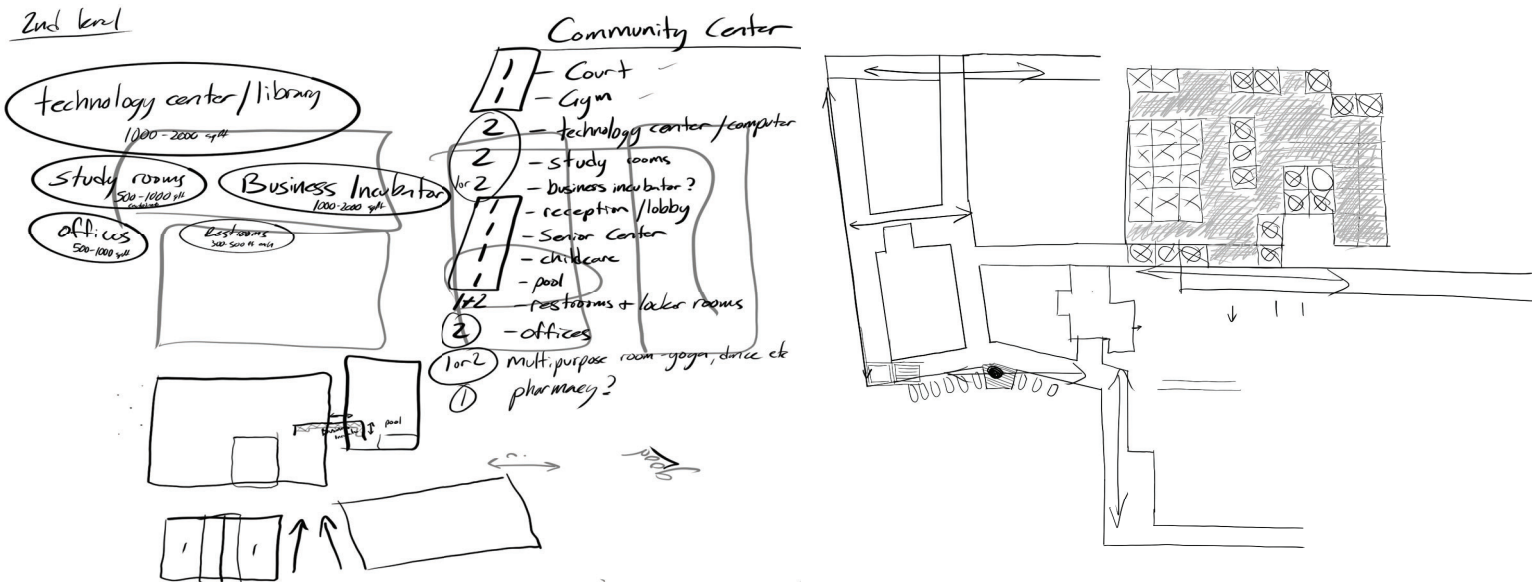
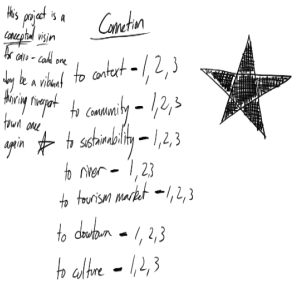
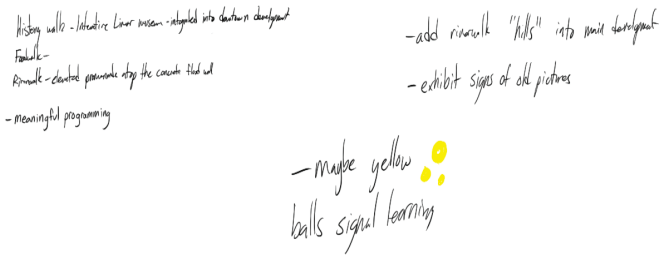
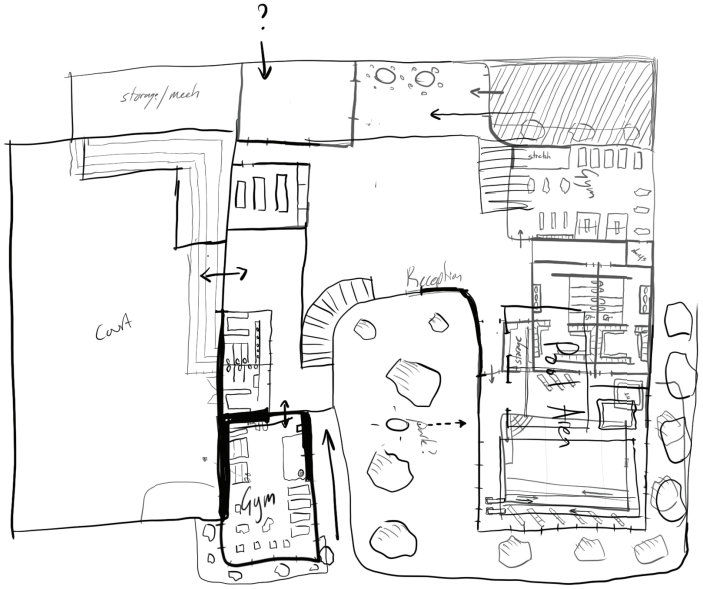
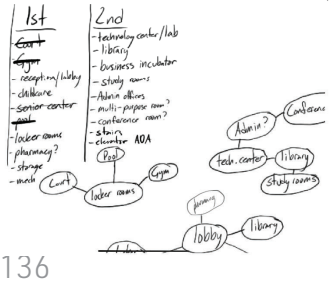






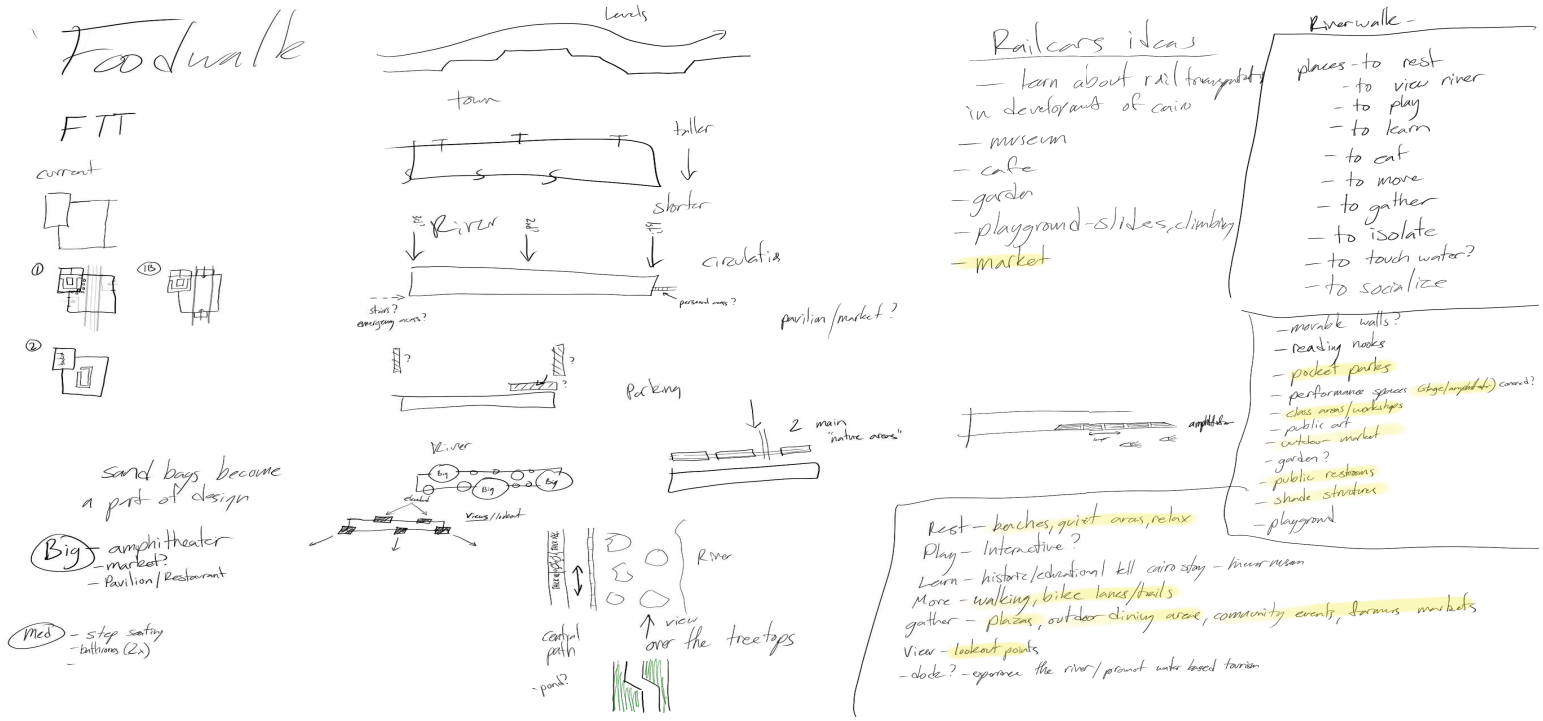




- well lit ADA pathways - barrier free - ramps
- ★ - shaded, seating areas
  - contextually relevant materials - reclaimed wood - clay brick etc
- ★ - bike sharing stations, electric charging stations
  - interactive public art (sculptures, murals - engaging)
- ★ - pop-up spaces - flexible / modular - shops, games, retail kiosks, food stalls to create opportunities for local entrepreneurs, artisans, businesses showcase
- ★ - outdoor public seating - plazas, pocket parks, courtyards, gardens (micro-community spaces) that provide comfortable seating options, shade, amenities - encourage social interactions, relaxation, + community gathering
- Community center provides: health, well being, recreation, personal + professional + local business growth opportunities - cater to all ages, abilities + interests
- ★ - food + beverage experiences - reflect local culture, promote sustainability
  - composting, recycling, rainwater harvesting
- ★ - native plants, character, water features
  - smart lighting systems - safety - reduce crime
- ★ - wayfinding - color
  - streetscape - local materials for paving - planters, solar lighting, pervious paving
  - modularity - movable seating, planters, retail kiosks
  - limestone, sandstone
- ★ - repurposing railcars as pop-up shops, art
- ★ - Linear museum - educational opportunities - curated pathway - interactive signages, murals, exhibits tell the story of cairo (history, culture, people, heritage) (decals, solar-multimedia)
  - to enhance overall experience, guide visitors, provide contextual information, sustainable practices
  - sustainability creates a green identity - attracts younger population, more tourism also contribute to overall sustainability + resilience of developments, promote environmental stewardship - provide educational opportunities
  - project is rooted in the needs, aspirations, history, context, etc. of cairo
  - address the needs of the community + context + provide opportunities for growth
- ★ - urban gathering spaces (micro-community spaces) focal points for gathering
  - go downtown not to just shop - instead - downtown becomes a place for everything
- ★ - outdoor dining / food courts
  - smart waste management - align w/ sustainability goals
- ★ - educational signage - raise awareness about sustainable practices + responsible behavior among visitors - encourage
  - Cultural + Educational programming - promote community events, workshops, celebrate local history, talents, traditions, stories, promote inclusion - meaningful programming
  - Integration w/ local urban fabric - scale, proportion, aesthetics
- ★ - street art, seating, vegetation - enhance identity of the development - reflect climate
- ★ - modular - prefabricated elements, adaptable spaces
  - allows for more cost-effective solution - can still be adapted, modified, personalized
  - make engaging spaces (like the louvres)
  - railcar - evoke history / significance of rail transportation to Cairo
  - foodwalk - diverse range of food / beverage options / experiences - immersive food experience
  - uses locally sourced ingredients, enhancing existing businesses
- ★ - Connectivity - interconnected
- ★ - Retractable canopy / pergola

Figure 102

Process Documentation+



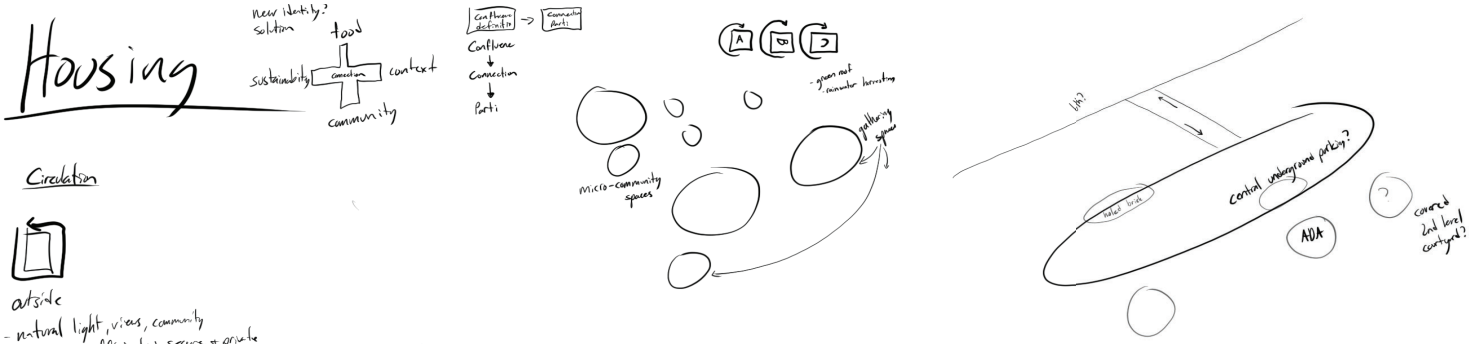
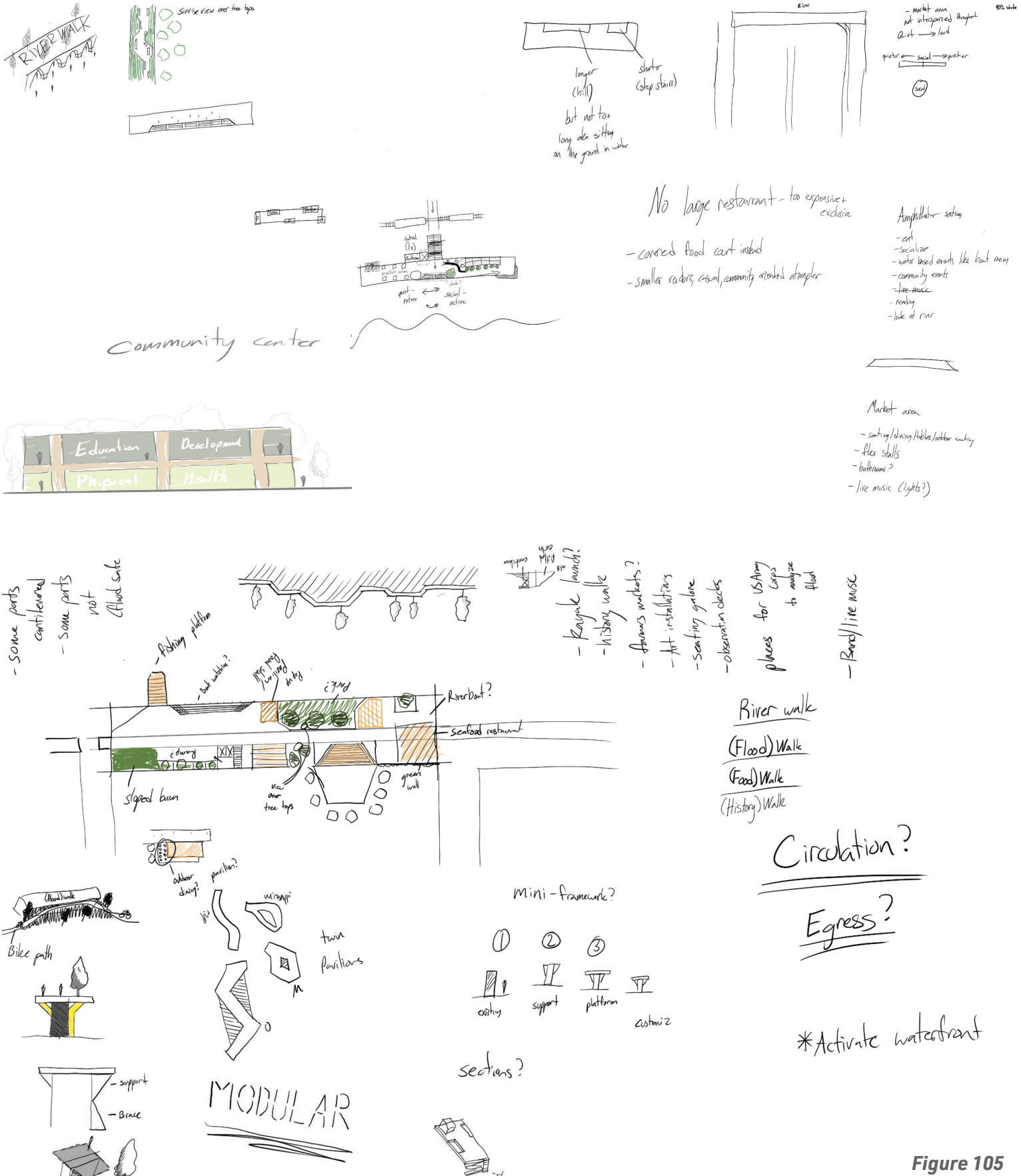


Figure 103

Process Documentation+

Figure 104

Process Documentation+



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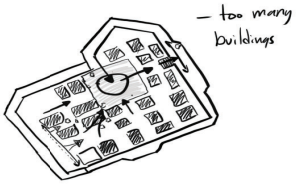

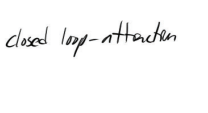

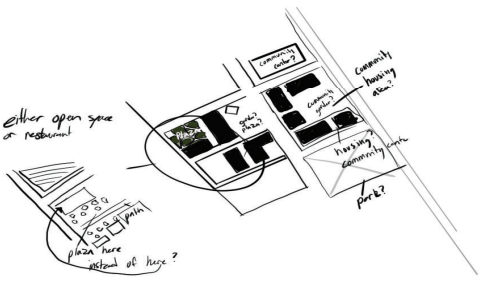

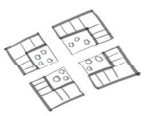

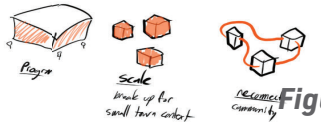

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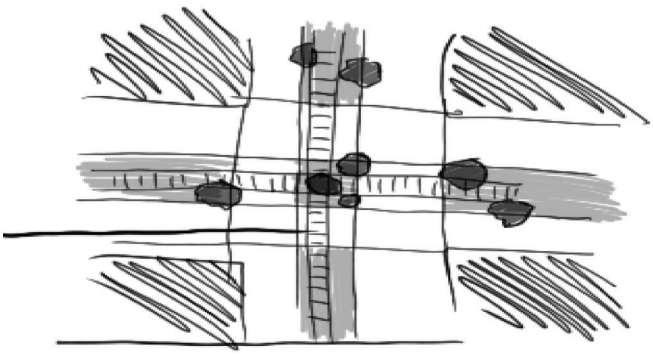
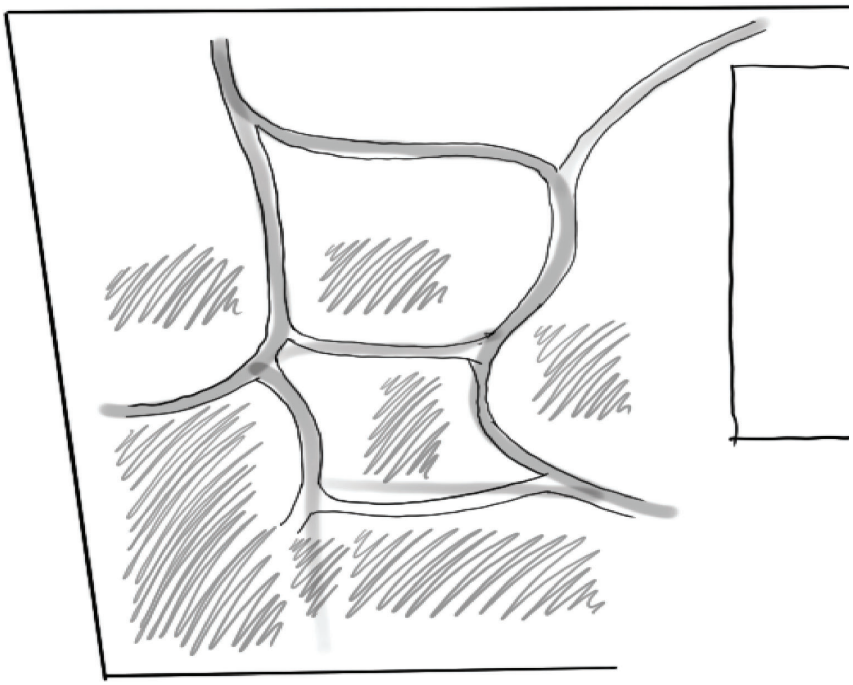
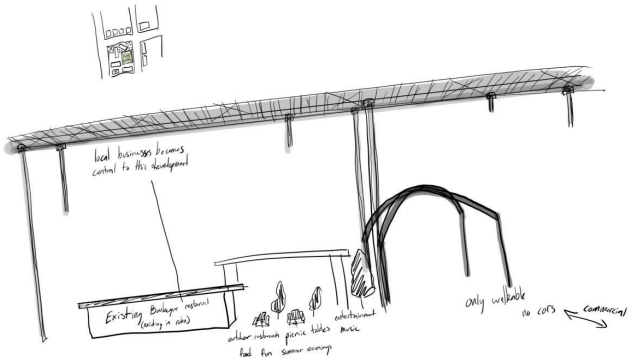
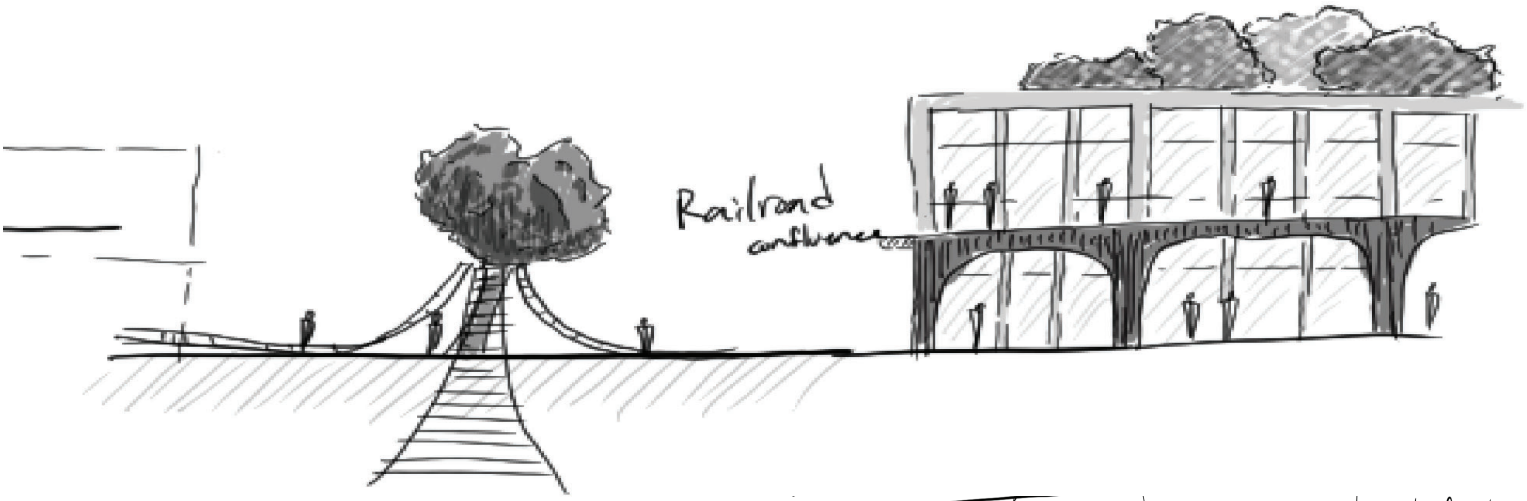
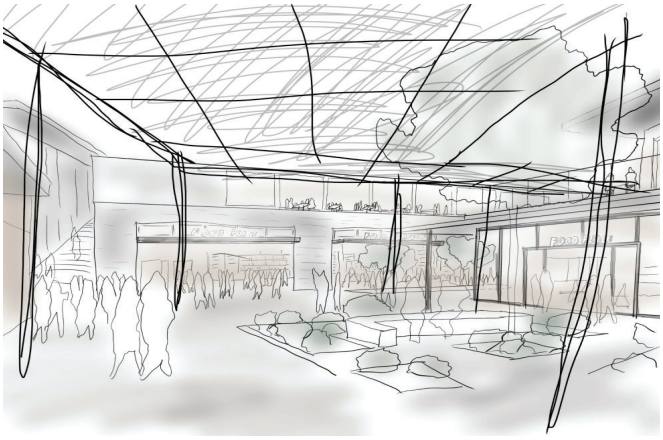










Railroad
- use old railroad tracks - decor / art / murals
- add railway car into the town center
- repurposed railway tracks (seating, pathways)

- Historic signage
- linear museum

River
- water features
- nautical murals
- riverfront activities
  - water activities
  - dining?
- encourage riverfront heritage

Brick facades
- reclaimed brick
- paving
- Archways? entrances?

Figure 107

project solution
documentation

A Mixed-Use Vision+

The solution of this thesis proposes a large-scale, mixed-use development that is split into two separate areas. The first is the primary, more concentrated development in the heart of downtown Cairo. The second is the Riverwalk Area, which is located around the floodwall that runs adjacent to the Ohio River. This comprehensive design incorporates various typologies and solutions, each tailored to address a unique aspect of the local community.

Figure 108

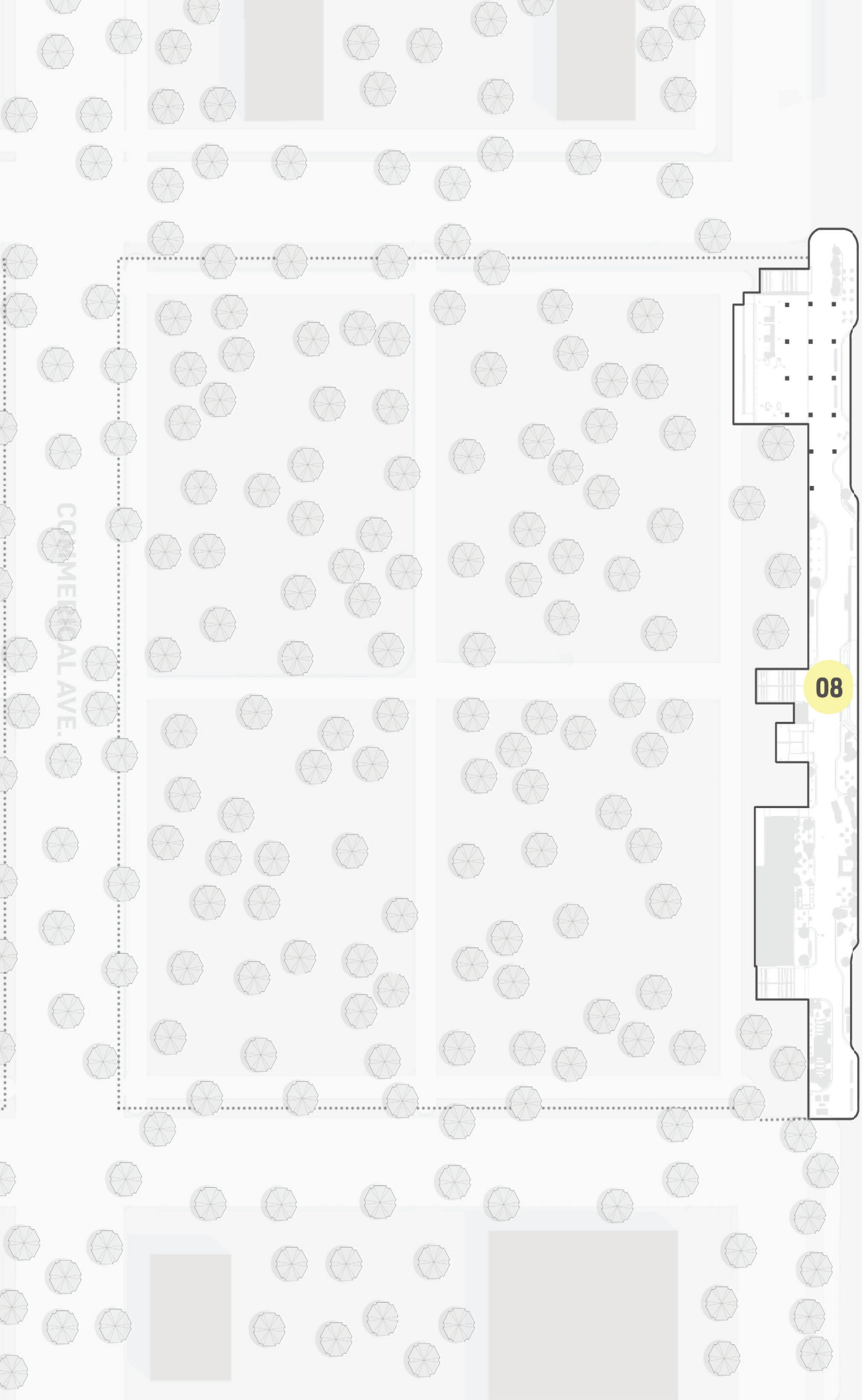
New + Hope

Envisioning a Brighter Future for Cairo, Illinois

MASTERPLAN

0 30 60 90 120 150 FT

01 GAS + CHARGING STATION
02 HOSTEL + GROCERY STORE
03 ICE CREAM PARLOR
04 HOMETOWN BARBEQUE
05 FARM-TO-TABLE RESTAURANT
06 COMMUNITY CENTER
07 MIXED-USE/INCOME HOUSING
08 RIVERWALK


08
OHIO RIVER

Fueling Station+

To address the inadequate tourism of the area, this design proposes a fueling station with both traditional gas and electric charging facilities, with the latter taking advantage of the national and worldwide movement towards electric vehicles such as Tesla. It is located at the corner of the busy Washington Avenue and 6th Street and sits between the hostel, grocery store, and housing complex. This location provides easy functionality and access to both residents and tourists alike.

The grocery store's strategic placement near the fueling station offers incoming travelers a convenient option for essential items, similar to the convenience stores that are commonplace in gas station typologies. This thoughtful location caters to the needs of both residents and visitors alike.

Figure 110

future + proof

Addressing Current Needs + Considering Future Growth

A Reimagined Experience+

The fueling station proposes a reimagined fueling station that aims to challenge the inherently transient and utilitarian nature of traditional gas stations, which typically do not encourage social interaction or provide a welcoming atmosphere. The design envisions beautiful, mass-timber fueling canopies with central, open, nature-filled areas meant for rest and relaxation.

These central spaces offer opportunities for people to sit and socialize with others during refueling breaks, as well as provide a place for children to stretch their legs. By transforming the gas station experience into one that is both memorable and enjoyable, this design creates a lasting, positive first impression of Cairo for its visitors.

Figure 111

fuel + serendipity

Interactive Fuel Canopies

Electric Charging+

Smaller fueling canopies in this design could incorporate electric vehicle charging stations, tapping into the growing nationwide trend towards electric vehicles, such as Teslas. This charging station concept could also be a viable strategy for other small towns as well. Imagine someone taking a trip in their Tesla from one area to the next, needing a charging stop along the way.

By offering charging stations in small towns, these communities can provide a valuable resource for electric vehicle drivers, which would also attract new visitors, exposure, and even revenue from an otherwise inaccessible market, benefiting such communities economically and increasing their visibility.

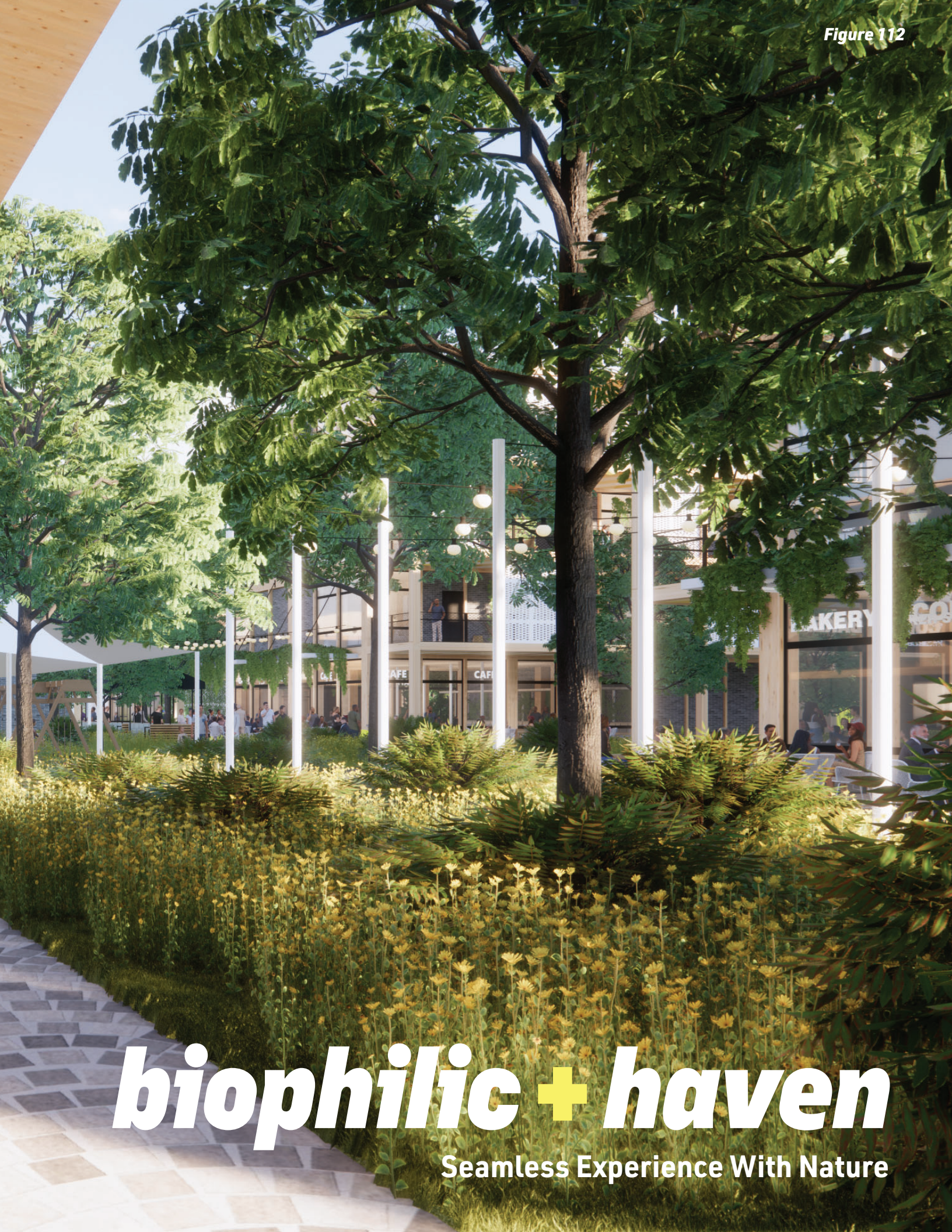


Figure 112
biophilic + haven
Seamless Experience With Nature

Foodwalk+

The central town square area would be a vibrant, active, and inviting place for people to gather. Designed as an interactive 'FoodWalk,' it would feature various food and beverage options. This was inspired by the understanding that not everyone is interested in traditional retail shopping, but everyone needs to eat and drink. This makes the foodwalk concept a universally appealing attraction.

This lively area offers several enticing food choices:

Ice Cream Parlor: This adaptive reuse project breathes new life into a historic fire station, creating a popular hangout for the youth and a place to enjoy refreshing treats during the hot, humid summers.

Local Barbecue: Instead of featuring a national chain which could gentrify local residents and businesses, the design anchors *Shemwell's Barbecue* as a central feature of the development, embracing and celebrating Cairo's local culinary traditions.

Farm-to-Table Restaurant: A dining option that emphasizes fresh, seasonal, and locally-sourced ingredients.

Homestyle Cafe: A cozy spot for comfort food and casual conversation.

Coffee Shop/Bakery: A welcoming space to enjoy freshly brewed coffee and baked goods. An ideal location to provide a stimulative experience for both residents before work or weary travelers using the fueling station.

Grocery Store: Providing essential food items and supporting the community's needs.

Figure 113

gather + socialize

FoodWalk + Town Square

Sustainable Sources+

Shown is the Farm-to-Table Restaurant that would establish relationships with nearby and regional farmers to provide fresh, seasonal, and sustainable ingredients for its menu. This local sourcing would not only help address the prevalent issue of food insecurity in Cairo but also provide economic stimulation and benefits in a more regional capacity.

susta

Figure 114

inable + contextual

Farm-to-Table Restaurant

A Dining Destination+

The foodwalk is thoughtfully integrated throughout the central development, encouraging visitors to explore and discover various dining options. For instance, the homestyle cafe (shown) is nestled behind the farm-to-table restaurant and concealed by trees along the fueling station. This helps to evoke feelings of adventure and relaxation.

Additionally, flexible canopy areas would be scattered across the foodwalk and provide covered spaces that can be utilized for games, community classes, or food stalls (shown). These food stalls, operated by local residents, not only generate job opportunities but also enrich the foodwalk experience. This positions Cairo as a vibrant local and regional hub for food and entertainment.

Figure 115

dine + discover

Vibrant, Mixed-use Downtown

Thoughtful Inclusion+

As highlighted in the site analysis, Cairo is facing a severe housing crisis. The impending shutdown of the Connel F. Smith building threatens to displace approximately 50-60 families, forcing them to leave their town. To address this issue, a mixed-use, mixed-income housing complex is proposed to accommodate those families at risk of displacement. Given that a significant proportion of Cairo's population are either older or potentially disabled, the complex would offer studio, 1, and 2-bedroom options, all with ADA considerations. To promote social interaction and engagement, various 'micro-community' spaces are incorporated throughout the complex, such as a central courtyard (shown) and an elevated green space for community gardening activities.

Figure 116

community + living

Housing Courtyard

Small Town Solutions+

This housing design takes the traditional concept of a 'front porch,' often associated with small towns, and turns it into something that fits a more urbanized setting. These pathways would primarily function as the building's external circulation and egress. However, making them extra wide provides space for social interaction, observation, personalization, and an enhanced sense of community. Additionally, white shading walls are constructed from recycled bricks sourced from the demolition of previously existing downtown buildings that were cleared for future revitalization. This sustainable approach preserves a connection to Cairo's architectural history while promoting a greener future.

Figure 117

small + town

Innvovative Solutions of Traditional Concepts

Family-Focused+

For many of the youth in Cairo, basketball is the sole pastime or recreation activity. By offering a safer, more accessible environment like a multipurpose court (shown), the design fosters a positive atmosphere that encourages growth and helps deter unproductive or harmful activities such as crime.

In addition to the court, the community center also includes other traditional amenities such as a gym, community kitchen, pharmacy, multipurpose rooms, lounge, and childcare areas, catering to the needs of local families and further strengthening the sense of community.

Figure 118

Bridging the Gap+

The community center also aims to bridge the educational and technological gaps often prevalent in small towns. The second-floor would house a library, technology lab, and study rooms that would provide educational resources, reliable internet access, and job training for local residents.

Furthermore, a business incubator would offer low-cost, rentable spaces and support for local entrepreneurs and startups, encouraging organic economic growth in the area. The Foodwalk's adaptable spaces allow local entrepreneurs to apply their skills and talents, creating a seamless environment that fosters collaboration and community involvement.


health + growth
Community Center + Library + Business Incubator

Figure 119

Taking to the Streets+

Envision a complete transformation of Cairo's street system, one that focuses on elevating the pedestrian and cyclist experience while still accommodating necessary vehicular traffic.

This comprehensive redesign includes traffic calming measures like narrower streets with lush, vegetated medians and protected crosswalks using chicanes to create a safer environment. These chicanes do more than just slow down vehicle traffic; they also would function as bioswales for stormwater runoff, contributing to the town's environmental stewardship.

Figure 120

complete + streets

Elevating the Pedestrian Experience

Connective Fabric+

The street redesign features extra-wide pathways with various notches for seating, public art, bike storage, historywalk exhibits, or even flexible canopy areas. These canopy areas could encourage food vendors to sell their products streetside, which would create a seamless extension of the Foodwalk. This would ultimately transforme Cairo's boring streets into two-lane, driveable plazas that prioritize pedestrians and cyclists. This concept could even act as an adaptable motif that can spread to other parts of Cairo, creating a sense of unity and inclusiveness throughout the community.

Figure 121

1. Extra Wide Sidewalks
2. Dedicated Bike Lanes
3. Protected Crosswalks
4. Chicanes + Bioswales
5. Streetside Parking
6. Flexible Canopy Areas
7. Bike Storage
8. Spaces for Seating + Art
9. HistoryWalk Exhibits

complete + streets

Elevating the Pedestrian Experience

Experience Expansion+

This all-inclusive approach transforms Cairo's urban fabric into an environment that celebrates walkability, livability, sustainability, and enjoyment for everyone. Including dual bike lanes presents a unique opportunity to lure tourists from the well-used state and regional biking and hiking trails, positioning Cairo as a natural extension of these paths.

The redesigned streets, with a strong emphasis on pedestrian safety, environmental care, and connectivity, do more than just uplift the town's visual appeal. They also spur engagement with Cairo's rich cultural tapestry and storied past, effectively incorporating the entire town into an unforgettable, immersive journey. Hence, the streets of Cairo become more than mere conduits of movement; instead they become a canvas that narrates the town's story and fosters a deep sense of community.

Figure 122

A Riverwalk to Remember+

The Riverwalk, Cairo's second primary pedestrian-centric solution, aims to address the disconnection from the river brought upon by the existing floodwall.

This area is divided into two distinct sections:

RiverWalk: An elevated promenade situated atop the existing concrete flood barrier that reconnects the community with the stunning Ohio River views.

Railcar Park: A linear park parallel to the Riverwalk, offering additional green spaces for the community to enjoy and reconnecting it to its railroad heritage.

The Riverwalk revitalizes the riverfront experience for Cairo residents and visitors, transforming it into a key attraction for tourists while also providing diverse spaces for community engagement, fostering a sense of pride and belonging.

Figure 123

river + walk

Reconnecting Cairo to the River

1. Existing Floodwall
2. Observation Areas
3. Riverwalk Market + Outdoor Dining
4. Restrooms + Elevators
5. Riverside Amphitheater
6. Nature Area + Bike Trail

7 **Interactive Seating**

8 **Community Pavilion**

9 **Existing Flood Gate + Boat Ramp**

10 **ADA Ramps**

river + walk

Community-Focused + Inclusive Spaces

(Flood)walk+

Built atop the floodwall, the Riverwalk seamlessly integrates with the existing infrastructure, allowing continued access to the boat ramp and maintaining the functionality and operation of the flood gates (shown) for local authorities.

The design truly shines during flood emergencies or routine flood seasons when the floodwall must be closed off, preserving river views and access for the community even in challenging conditions. This innovative approach demonstrates the power of resilient design that adapts to environmental challenges while enhancing the community experience.

Figure 125

flood + resilience

Elevated Riverwalk Upon Existing Floodwall

Community-Centered+

The Riverwalk is designed with community and inclusion in mind, featuring various spaces catering to diverse needs, from socializing and relaxing to observing and dining. This thoughtful approach aims to make the Riverwalk an integral part of the community.

By offering a range of amenities and gathering spaces, the Riverwalk fosters social connections and strengthens the bonds between Cairo's residents, creating a sense of unity and shared identity.

Figure 126

Riverside Adventures+

What if the Foodwalk also extended seamlessly into the RiverWalk area, merging the 'culinary adventure' with breathtaking waterfront views?

The RiverWalk Market (shown) could host farmers' markets, pop-up food stalls, and more. This could provide additional opportunities for economic development, community interaction, and visitor enjoyment. Furthermore, the entire downtown area could be woven together into a unified 'Cairo' experience.

Framed by uninterrupted views of the stunning Ohio River and sheltered by the versatile canopies introduced earlier in the design, this fusion of food, nature, and history creates a memorable and enriching experience for all who visit.

Figure 127

Access for All+

Shown here is an elevated dining area situated adjacent to the RiverWalk Market. Due to its elevated nature, the design preserves visual access to the Ohio River, even being further back from the water's edge.

Additionally, the riverwalk also employs various ADA ramps, lifts, and inclusive areas and facilities to ensure people from all walks of life can access and enjoy the stunning views of the Ohio River.

Figure 128

Railroad Reconnection+

The railcar park, situated alongside the elevated riverwalk, is as a linear park that celebrates Cairo's rich history and connection with the railroad industry. Immersive experiences such as walking over railroad tracks (shown) help to symbolize this connection and engage users as they approach the riverwalk.

This unique green space offers visitors a chance to reconnect with the town's heritage and provides a serene environment for cycling, leisurely strolls, relaxation, and social interactions. Featuring repurposed railcars, tracks, and other contextual elements, the park pays homage to Cairo's past while embracing a brighter future.

Figure 129

journey + heritage

Railcar Park + HistoryWalk

Historywalk+

The 'historywalk' is the last key component of this solution, providing visitors with an immersive, interactive experience that highlights Cairo's rich heritage. Envisioned as a linear visitor center, the historywalk weaves throughout the downtown, featuring exhibits, kiosks, murals, historical markers, guided digital tours, etc. that all tell Cairo's unique stories.

From the tales of Lewis and Clark to Fort Defiance's role as a Union army training outpost during the Civil War, the bustling riverport and railroad town, devastating floods, the dark chapters of the civil rights movement, and even its mention in Huckleberry Finn, this interactive journey enables Cairo to stand out among small towns.

Alternatively, this exciting concept has the potential to be adapted and embraced by other small towns as well. This could help to preserve their history, culture, and identity while engaging visitors in a meaningful way. Either way, the historywalk ensures that Cairo doesn't become 'just another small town.'

Figure 130

Final Presentation Board Layout+

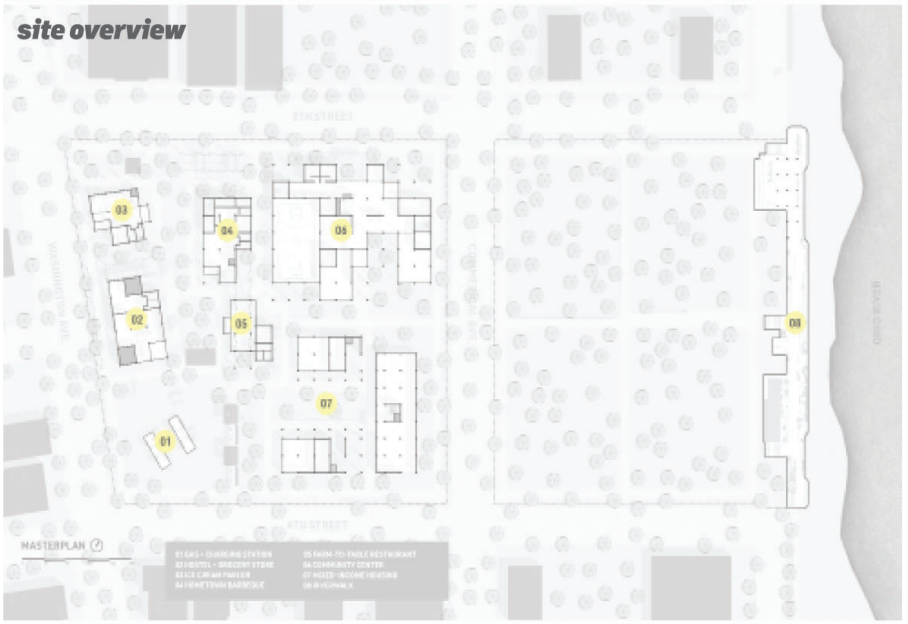
At the confluence of the two largest rivers in the United States stands the small town of Cairo, Illinois. A once-thriving riverport town with a rich history, Cairo now exists as a vivid representation of small-town decline. At first glance, Cairo is a motionless, empty shell plagued by boarded-up windows, crumbling walls, and severe urban blight. However, the inside of this facade tells the story of a loyal and passionate community that remains hopeful that their town will one day return to its former glory.

In order to capture that hope, this thesis investigates the role of architecture in reviving small-town America. Using a context-driven approach, the potential benefits and viability of sustainable design in small-town contexts are explored to address the underlying issues currently facing the local community. Through a comprehensive analysis of the area, this thesis envisions a large-scale, mixed-use development in the historic heart of downtown Cairo that promotes tourism, fosters community well-being, and catalyzes economic growth. By integrating environmental stewardship, cultural preservation, and enhanced quality of life for residents, the project aims to create a vibrant, resilient urban environment that pays homage to Cairo's past while forging a bright, sustainable future for its people.

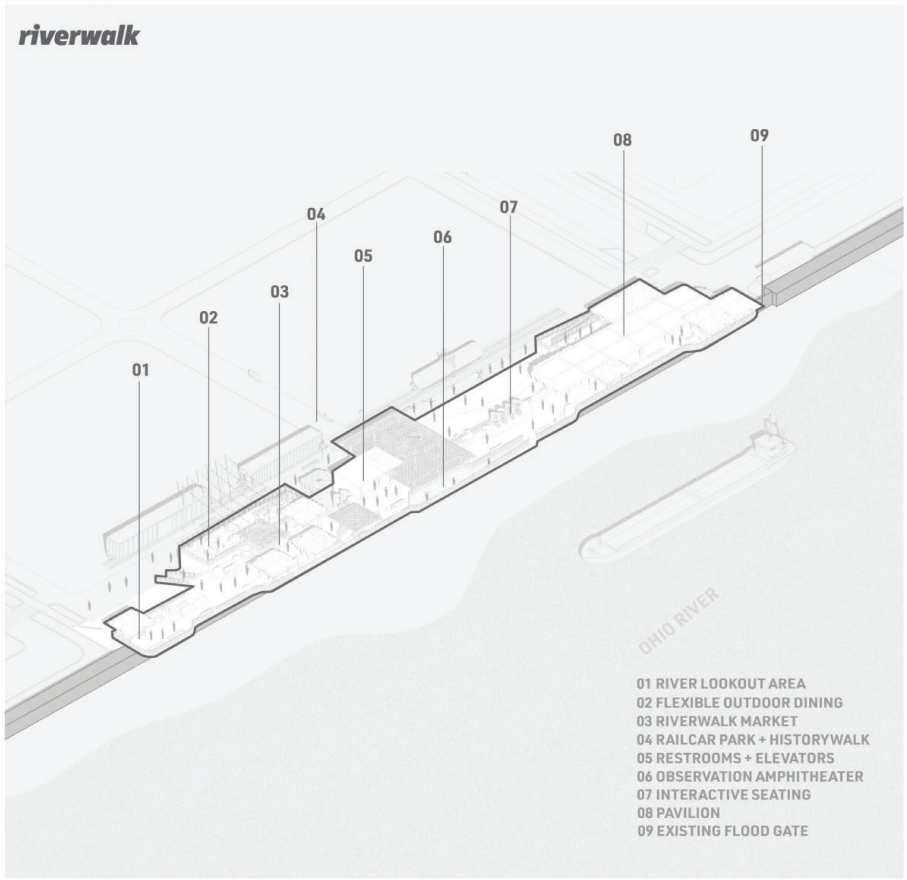
confluence+

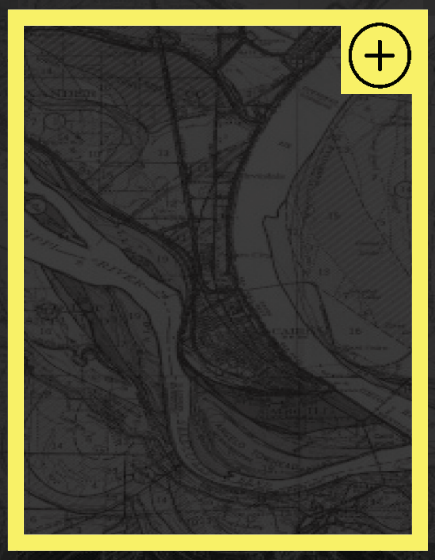
A Vision of Growth, Sustainability and Hope for the Small Town of Cairo, Illinois

site overview



Final Presentation Board Layout+





performance analysis

Figure 132

Response to Site and Context+

The design solution proposed for Cairo, Illinois, shows a thoughtful and multi-faceted response to multiple, unique conditions of the site. The design also reflects a proper understanding of the town's distinct environmental, cultural, social, and historical contexts.

More specifically, the design solution addresses several of the issues outlined in the site and context analysis. A few of the aspects that this proposal addresses are as follows:

Food Insecurity: The design directly addresses the issue of food insecurity head-on by incorporating a local grocery store and a diverse range of food options within the Foodwalk. This strategy not only improves access to fresh produce but also supports local businesses, thereby stimulating the local economy. The food offerings within the Foodwalk are each contextually tailored and locally sourced, rendering the concept both meaningful and beneficial to the community.

Public Housing Crisis: The design responds to the local housing crisis with the introduction of a mixed-income housing complex. This initiative provides affordable housing options for local residents, specifically catering to families currently being displaced from the Connell F. Smith building. The housing units are thoughtfully designed with ADA considerations, which cater to Cairo's aging population.

Urban Blight: The design aspires to rejuvenate Cairo by methodically transforming its blighted downtown area into a vibrant, sustainable, and pedestrian-friendly community. It further promotes sustainability by recycling bricks from demolished buildings, thereby reducing waste and enhancing the unique, contextual aesthetic of the design.

Educational and Technological Gap: The design addresses the lack of educational and technological resources, often characteristic of small towns like Cairo. The community center and business incubator play a crucial role in this aspect.

The community center encompasses traditional wellness spaces, as well as a library and technology lab creating an integrated educational environment. The business incubator, on the other hand, fosters entrepreneurial activity, further contributing to Cairo's economic vitality.

Figure 133: Redesigned Street System.

Disconnection from the River: Given Cairo's geographical location at the confluence of the Mississippi and Ohio rivers, the design emphasizes its waterfront identity while also addressing potential flooding challenges.

The Riverwalk, an elevated promenade atop the existing flood barrier, offers an innovative, dual-function-solution. It maintains normal boat ramp access and flood protection functionalities, while also serving as a gathering place for residents.

Furthermore, the reimagined street system enhances connectivity between the riverfront, the central development of the town, and the wider Cairo community, thereby integrating the riverside with the urban fabric of Cairo.

Lack of Tourism Infrastructure: The design addresses the lack of tourism infrastructure through the addition of an in-town gas station, providing refueling options for locals and visitors alike. The low-cost hostel offers affordable accommodations for a diverse range of visitors, from outdoor enthusiasts to budget-conscious travelers.

The Foodwalk, Riverwalk, and Historywalk, each filled with unique recreational activities, attractions, and historical insights, transform Cairo into an attractive and welcoming destination. The street redesign prioritizes walkability and cyclists, contributing to an inviting and interconnected urban environment that could help to attract state and regional trail tourists.

Figure 134

Response to Precedent Research+

The design solution for this thesis has been significantly shaped and informed by the insights and observations gathered from the previous precedent studies: the Moorhead, Minnesota downtown masterplan, the revitalization of Greensburg, Kansas, and even considers the less-successful Harbor Shores development in Benton Harbor, Michigan.

Masterplan of Moorhead, Minnesota

One of the main concepts derived from the Moorhead revitalization was dividing the downtown into unique 'character' districts. This concept is adapted within the design as illustrated by the separate Riverwalk and central development areas. This intentional separation facilitates a focused and organized layout that promotes walkability and allows for future expansion.

This concept of walkability, another cornerstone of the Moorhead revitalization, is futher employed through the creation of pedestrian-friendly spaces and the comprehensive redesign of Cairo's street system that weaves these distinct areas together, establishing a seamless connective fabric across the town.

Another thing I learned from the Moorhead case study is its emphasis on nurturing local businesses and honoring local culture. This principle is incorporated into the design mainly through the creation of the Foodwalk. The Foodwalk accentuates locally sourced food options and fosters the growth and expansion of local businesses such as Shemwell's Barbecue.

This strategy directly tackles the issue of food insecurity in the community while also mitigating potential issues witnessed in the Harbor Shores development. Moreover, it also assists in creating a unique identity for Cairo that reflects its cultural heritage, much like in the Moorhead example. Along with these aspects and many others, the Moorhead case study proved to be very insightful.

Revitalization of Greensburg, Kansas

The design also employs lessons learned from the successful Greensburg, Kansas revitalization. One of the key takeaways from Greensburg was the recognition of the benefits that can be unlocked by taking calculated risks with larger, more comprehensive solutions. This approach has the potential to yield a more profound impact on the local community, as opposed to more fragmented or smaller individual initiatives.

Additionally, the Greensburg case study provided invaluable insights into effective practices and considerations for integrating sustainable design within a small-town context. It also demonstrated how a comprehensive approach to sustainability can lead to long-term benefits for both the local community and the surrounding environment.

Reflecting on this understanding, the design for this thesis adopts a macro perspective toward sustainability. Rather than just concentrating on the particulars of specific sustainable elements, it takes a more expansive view that encompasses the sustainability of the entire community and its relationship with the broader region and environment.

Despite this zoomed-out focus, the design still pays attention to the importance of smaller measures. Including elements like passive design solar panels, rainwater harvesting, green roofs, mass timber construction, bioswales, native species, solar lighting, and permeable pavement, underlines the projects commitment to greener practices.

However, these measures are woven into a larger vision that prioritizes comprehensive environmental stewardship and the long-term viability of the Cairo community. True to the underlying parti of this thesis, the design balances the need for immediate, tangible, sustainable practices with the bigger picture of sustainable community development.

Figure 135

Response to Goals+

The first theoretical goal of promoting sustainable development has been addressed in several ways, many of which have been recently and heavily mentioned. The design incorporated several sustainable practices, such as the use of solar panels, rainwater harvesting, green roofs, and mass timber construction. In addition, measures such as permeable pavement and stormwater management have been implemented to address flooding risks. The design also respects the region's ecology, using native species in landscaping and passive design elements that work with the local climate, both of which minimize environmental impact.

The design approach embodies urban revitalization, addressing many of Cairo's key challenges outlined in the site analysis. Additionally, by creatively redesigning the street system and introducing key areas like the Riverwalk and Foodwalk, the design not only rejuvenates the physical environment but also stimulates local businesses, promotes tourism, and fosters community cohesion, setting the stage for Cairo's vibrant, sustainable future.

The goal of historic preservation has been carefully woven into the design. Adaptive reuse of historic buildings, such as the transformation of the fire station into an ice cream parlor, maintains the town's connection to its past while serving more contemporary needs. Furthermore, the design celebrates Cairo's cultural heritage, particularly through the Historywalk that is spread throughout the development. This functions as an interactive historical journey through the town's rich past.

The physical goal of promoting walkability and bikeability is achieved through the aforementioned redesigned street system and the creation of pedestrian-friendly spaces, which enable easy and safe movement across the town. The strategic introduction of distinct features like the Riverwalk, Historywalk, and Foodwalk further underscores the town's transformation into a walkable and bike-friendly environment, as suggested by their very names.

The mixed-use development goal is fulfilled by introducing density and various functions within the previously barren downtown district. The proposal of this thesis imagines a vibrant, compact, and multifaceted urban environment with a blend of residential zones, commercial hubs, recreational areas, and essential public amenities, all conveniently located within a short walking distance of each other.

In terms of river connectivity, the design harnesses Cairo's unique geographical position at the confluence of two major rivers. The Riverwalk not only allows residents and visitors to engage with the rivers but also maintains its primary function as a flood barrier.

The design also addresses the social goal of inclusivity by emphasizing the creation of affordable housing, ADA accommodations, and community-oriented public spaces. Collectively, these elements promote inclusion, minimize displacement, and ensure universal accessibility.

Community engagement is fostered through the creation of public spaces such as the Riverwalk and the Foodwalk, which serve as community gathering points. These spaces are designed to encourage interaction among residents and strengthen the sense of community.

The goal of economic development is addressed by supporting local businesses and regional farms via the Foodwalk and catalyzing tourism through attractions like the Riverwalk. The design also incorporates a business incubator to organically stimulate entrepreneurship and innovation. Furthermore, smaller, adaptable canopy spaces offer a practical platform for the application and growth of these new skills.

Lastly, the design tackles the goal of education and skills development by proposing a community center offering educational resources, reliable internet access, and job training for residents.

presentation slides

Presentation Slides+

How can architecture help to revitalize the dying, small town of Cairo, Illinois?

Presentation Slides+

contents

01 Intro
- Problem
- Background
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02 Context
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03 Research
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- Key Takeaways
- Goals

04 Response
- Proposal
- Key Concepts

Presentation Slides+

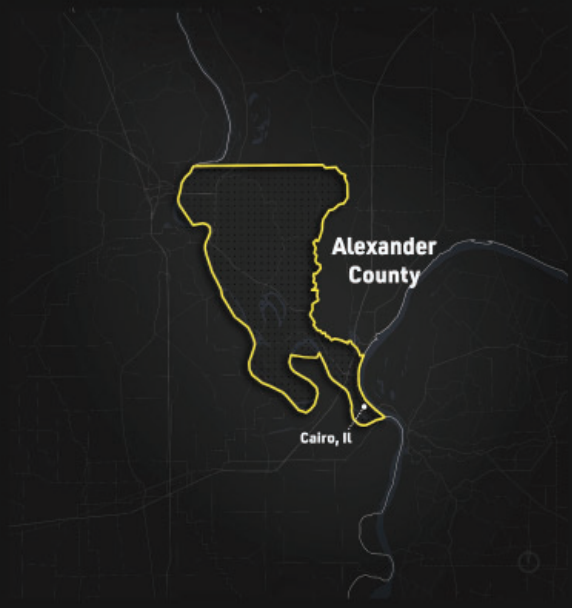
46 Million

Presentation Slides+

02

cairo, il?+

location



Presentation Slides+

Presentation Slides+

local issues

- Housing Crisis
- Food Insecurity
- Economic Desert
- No Tourism Infrastructure
- Severe Urban Blight
- Disconnection from River
- Crime
- Gap in Technology + Education
- Lack of Positive Identity

Presentation Slides+

housing crisis

- Elmwood, McBride
- Connell F. Smith Building
- 100s of Familes Displaced

Presentation Slides+

food desert

- No Grocery Store
- Long Commutes (33+ min.)
- Single Restaurant (BBQ)

Presentation Slides+

river disconnect

- Flood Wall
- Flood Gate
- Levee System
- Safe, but disconnected

Presentation Slides+

change is coming

- *Incoming Port Development*
- *'Rebuild Illinois' Capital Plan*
-
- *$40 Million Committed*
- *A Focus on Green*
- *$100+ Million Economic Activity*

climate analysis

- *Humid-Subtropical*
- *Hot, Humid Summers*
- *Considerable Rain*
- *Mild Winters*

Presentation Slides+

research

Small town decline

Economic struggles + overdependence
Population loss from urban migration
Aging Population
Lack of Investment

Understanding the Stigma

Gentrification + displacement of residents
Lack of Community Engagement
Unthoughtful design + solutions
General lack of knowledge of proposals

Small Town Revitalization

Mixed-use development
Green infrastructure
Walkability + bike-friendly design
Economic diversification

Contextual Design

Respect for local context + character
Balancing innovation with preservation
Use of local materials + building techniques
Focus on community needs + preferences

Mixed-Use

Multiple uses in a single development
Promote walkability + reduce reliance on cars
Supporting economic vitality + diversification

Sustainable Design

Green building design + materials
Renewable energy
Reduce environmental impact
Create healthy + livable environments

New Urbanism

Walkable, mixed-use neighborhoods
Strong sense of community
Reduce reliance on automobiles
Promote sustainable transportation

Sustainable Urbanism

Socially-sustainable urban areas
Green infrastructure, energy, transportation
Reducing environmental impact of design

EPA Smart Growth

Effectively managing urban growth
Sustainable + environmentally responsible
Reduce urban sprawl
Compact, walkable, mixed-use communities
Emphasis on collaboration

Main Street Approach

Community-based economic revitalization
Preserve historic buildings + local character
Emphasis on small businesses
Emphasis on community involvement in process

Placemaking

Community-based planning + design
Emphasis on vibrant + accessible spaces
Mixed-use development + green infrastructure

Transformative Placemaking

Values interconnectivity + engagement
Emphasis on vibrancy + inclusivity
Focus on economic + community development
Holistic, people-first approach to growth

Historical Context of Cairo

Lewis and Clark history
Civil War Union outpost
Dark history of racism and violence
Decline of mining and river port industries
Devastation from floods
Ongoing economic + social challenges

Revitalization of Greensburg, Kansas

Emphasis on green, sustainable design
Prioritize community involvement
Economic diversification
Revitalization of downtown area

Moorhead, Minnesota Masterplan

Emphasis on mixed-use + walkability
Green infrastructure + transportation
Focus on community engagement

takeaways ➡

Presentation Slides+

takeaways

- Diverse Economy
- Mixed-Use
- Interconnected Layout
- Identity = Important
- Introduce Density
- Cairo = Rich History
- Contextual Design
- Walkable + Bikeable
- Inclusive Planning
- Create Town 'Center'
- Green Design + Materials
- Mixed-Income Housing
- Sustainable is the future
- Compact development
- Avoid Gentrification
- Community Engagement
- Preserve Heritage
- Economic Resilience

design goals

1. address critical needs+
2. promote tourism-based economy+
3. focus on downtown+
4. promote walkability + foster interactions+
5. reconnect the community+

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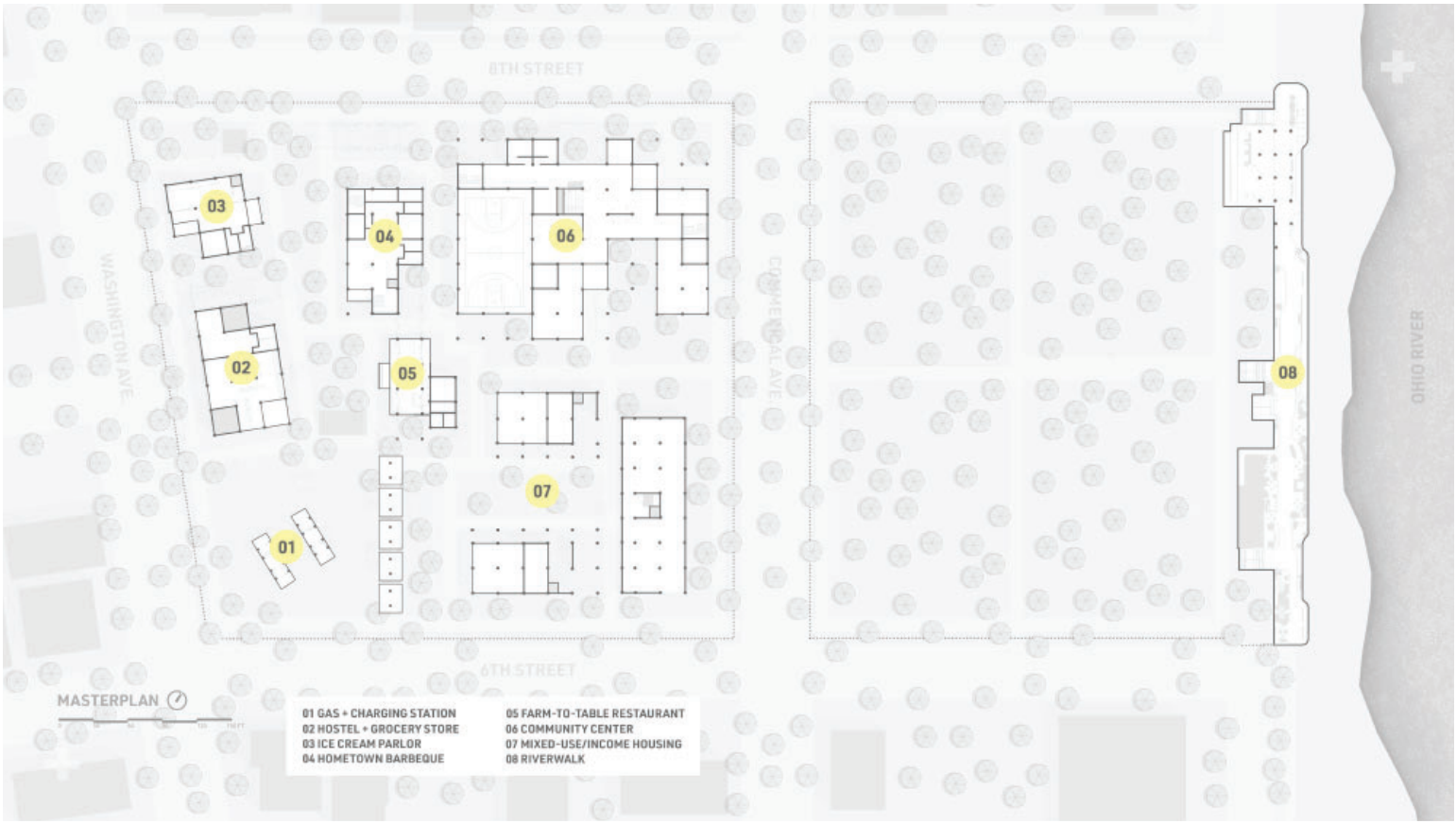

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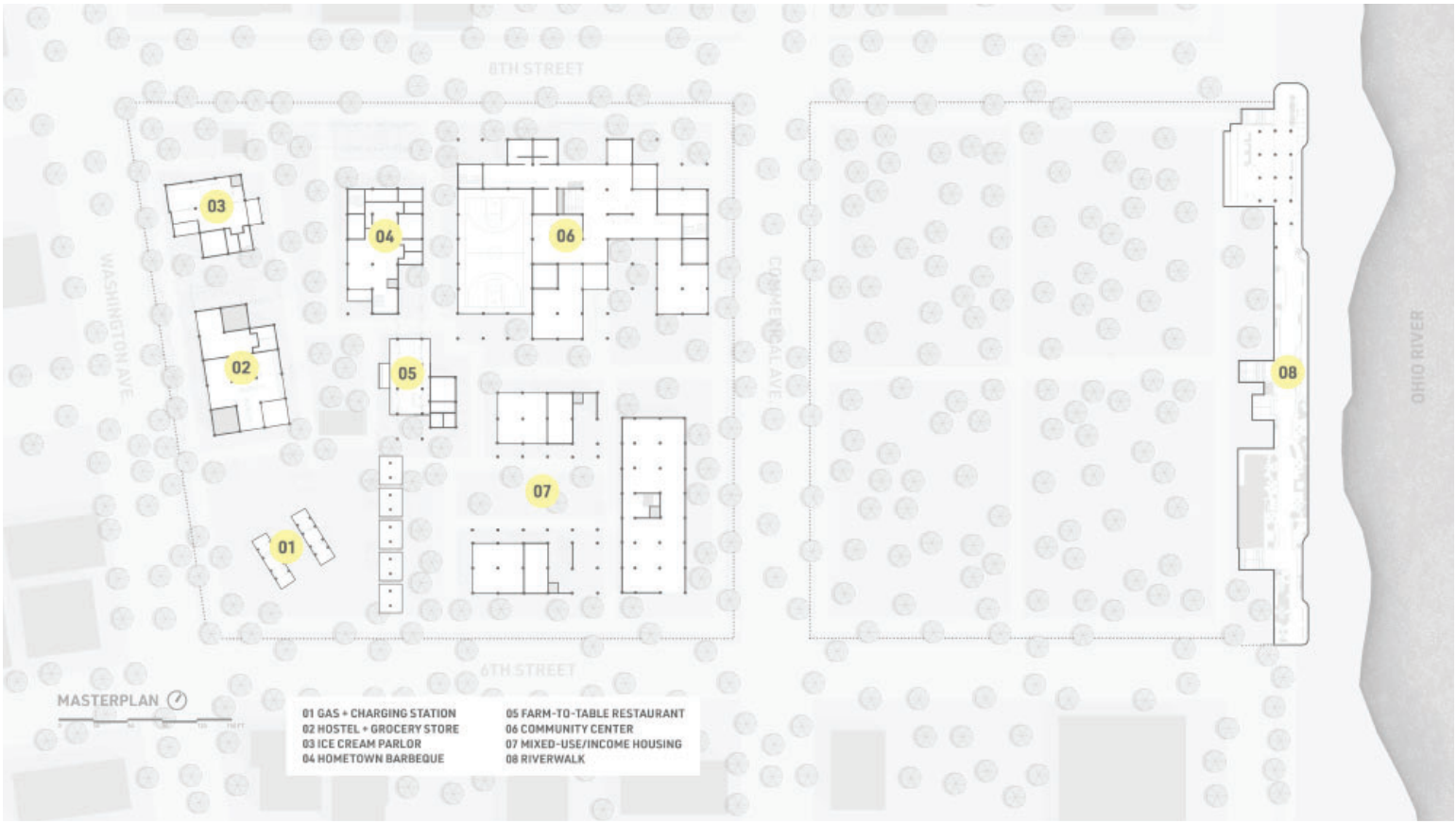

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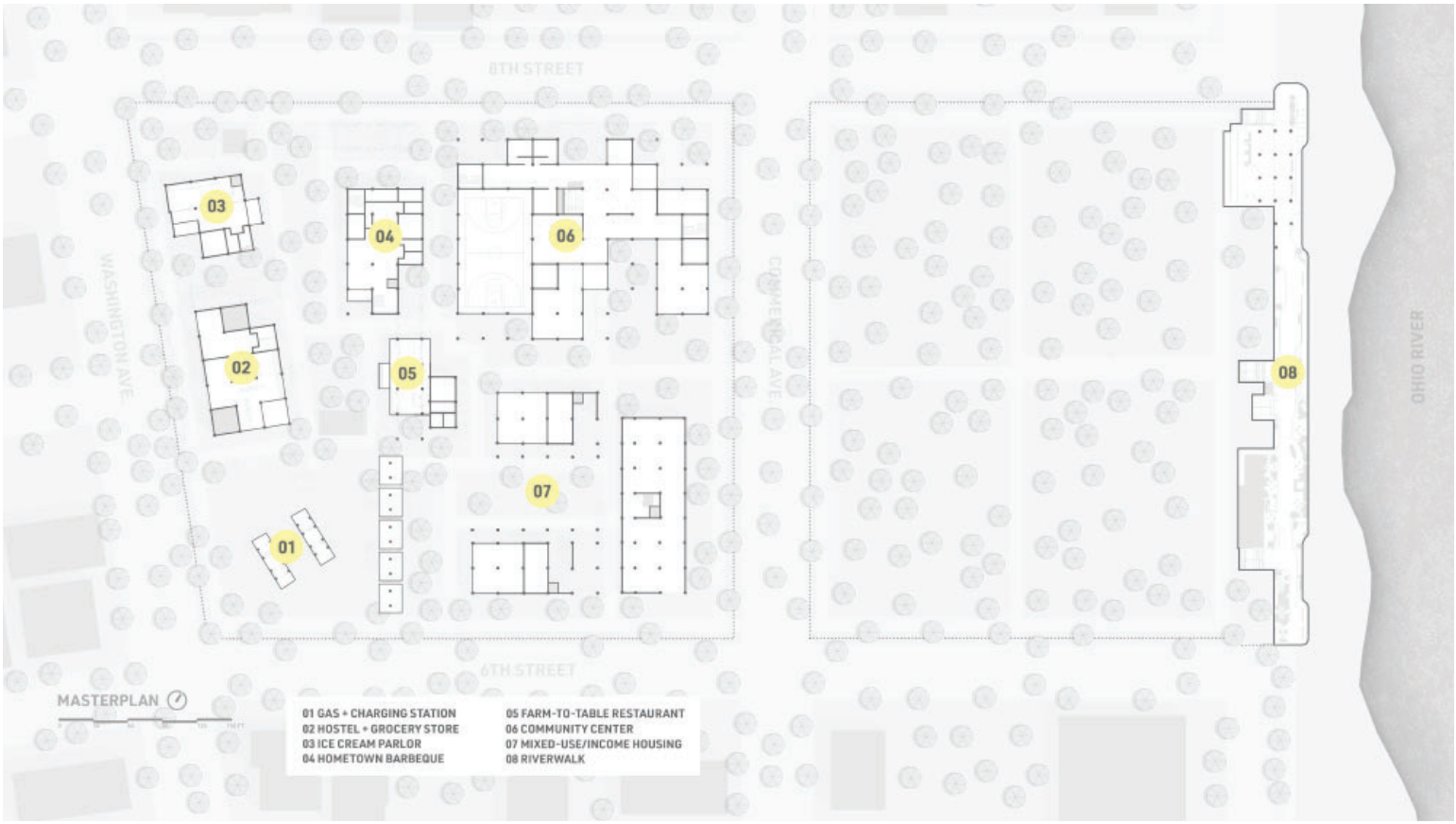

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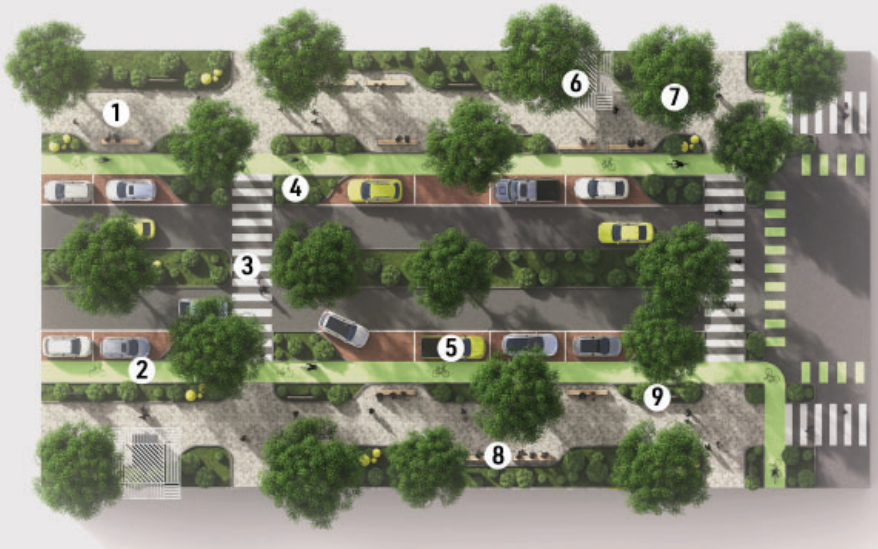
complete + streets

Elevating the Pedestrian Experience



1. Extra Wide Sidewalks
2. Dedicated Bike Lanes
3. Protected Crosswalks
4. Chicanes + Bioswales
5. Streetside Parking
6. Flexible Canopy Areas
7. Bike Storage
8. Spaces for Seating + Art
9. HistoryWalk Exhibits

complete + streets

Elevating the Pedestrian Experience

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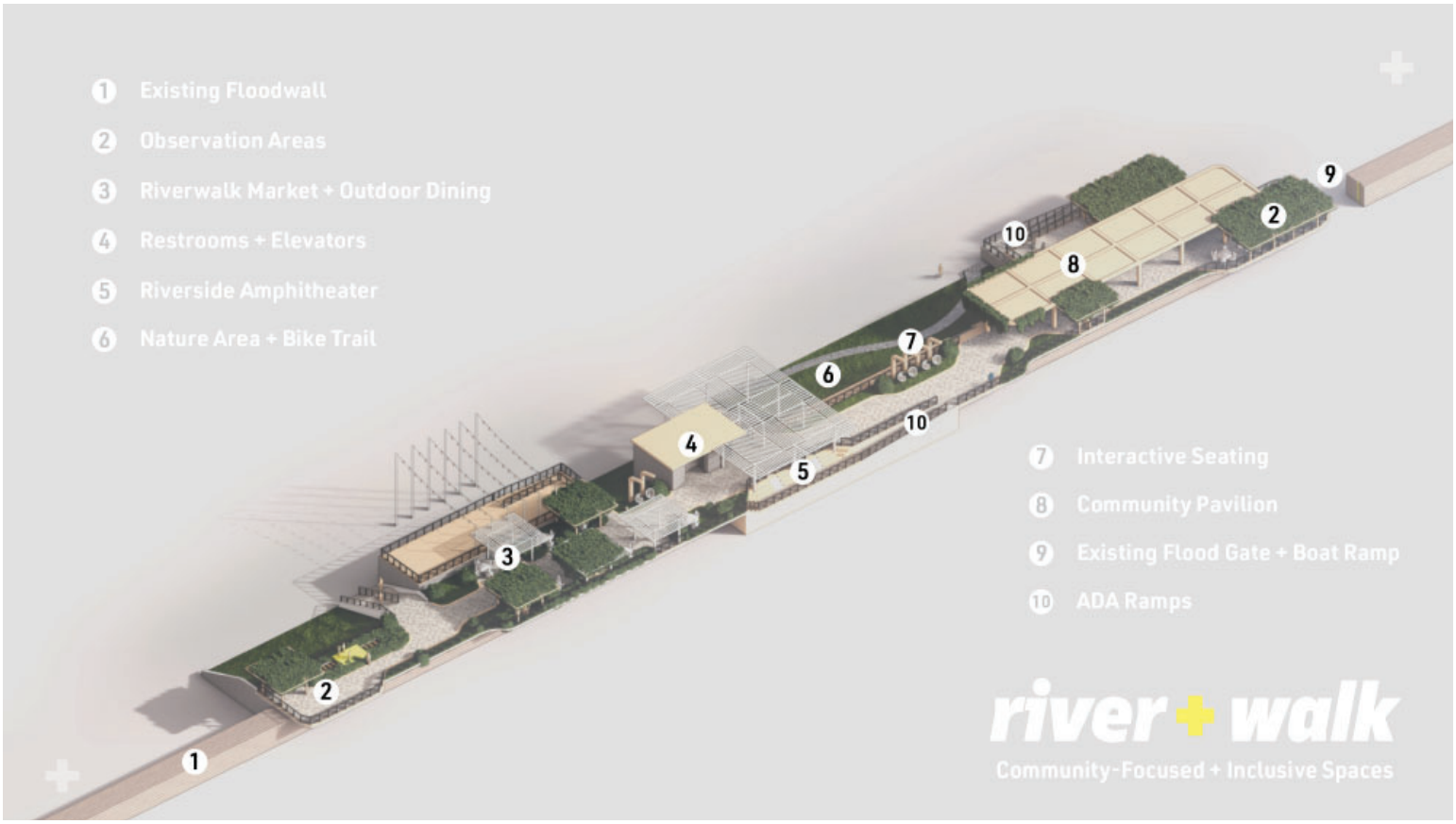

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Final Project Installation+

Figure 136

04

thesis appendix

*"Inspiration defines a vision, a vision defines a solution,
and the solution defines the next inspiration." - Robert Currie*

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Previous Studio Experience+

2nd Year+

Fall 2019 - **Emily Guo**
Land Artist Studio - Public Housing
Boathouse - Boathouse

Spring 2020 - **Ron Ramsay**
Cripple Creek - Residential
Fargo Low-Rise Development -Mixed-Use

3rd Year+

Fall 2020 - **Niloufar Alenjery**
Prison of Roses - Poetic Interpretation
The Veil - Beirut Memorial

Spring 2021- **Cindy Urness**
Eden Grove Surgical Center - Outpatient Clinic
SODAA Pavilion Competition - Temporary Architecture

4th Year+

Fall 2021 - **Amar Hussein**
Nexus² (Capstone) - Highrise, Mixed-Use

Spring 2022 - **Amar Hussein**
House | C - Residential
Bal Laguna - Masterplan

5th Year+

Fall 2022 - **Ron Ramsay**
Confluence (Thesis) - Mixed-Use, Masterplan

thank you+

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